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Photograph by B. C. Adkin

TIRYNS: "CYCLOPEIAN" WALLING

(See page 759)

JOURNAL OF THE
ROYAL INSTITUTE *of* BRITISH ARCHITECTS

VOL. 40. 3RD SERIES 5 AUGUST 1933 No. 18

Journal

The following letter has been sent to every member of the R.I.B.A. in England, Scotland, Wales and Northern Ireland. 28 *July* 1933.

REGISTRATION

DEAR SIR,—I understand that you have received a communication from a body calling itself the "Institute of Registered Architects."

This body has no connection whatever with the R.I.B.A., or with the Architects' Registration Council, nor has it any functions of any sort in connection with the administration of the Registration Act.

Its creation is superfluous, and members of the R.I.B.A. and the Allied Societies will be well advised to disregard it altogether.

To join such a body would, in fact, be a contravention of the membership declaration signed by every member of our body. Yours truly,

GILES GILBERT SCOTT,
President.

The Special Committee on Fees for Housing Work, appointed by the Council of the R.I.B.A. last March, have now submitted their final report, following on the interim report referred to in the JOURNAL of 8 July and the publication of the new Scale of Charges for Speculative Builders' Work.

In view of the various pronouncements by the Minister of Health recently on the important question of slum clearance and rehousing, the Special Committee were asked to prepare a simplified scale of fees covering the preparation of plans for housing schemes and including supervision. The Committee have evolved an entirely new scale for this type of work, in the hope that local authorities and public utility societies, encouraged by the Minister's appeals, will employ fully qualified architects at substantially reduced fees to carry out the work. At the same time the Council have withdrawn the 1925 Scale of Charges for Housing Work and the 1932 Scale for Private Enterprise and Municipal Housing Work.

As is pointed out in the preamble to this latest scale, local authorities may, in some cases, desire the Council Surveyor to carry out part of the work, and the scale has been arranged to meet these requirements. It is, however, preferable that the architect should be employed to carry the scheme through all its stages; it is believed that the new scale will be found to be so reasonable that this method will be widely followed. The Committee have also reported on the question of fees for the reconditioning of old property. After careful consideration it was not considered possible to lay down a separate scale for this work as the circumstances vary so widely in each individual case. The architect should, therefore, charge his fees on a *quantum meruit* basis—that is to say, on the amount of work he is called upon to perform.

The new Scale of Charges for Local Authorities and Public Utility Societies' Housing Work, which was approved by the Council at their meeting on 17 July, is issued to members as an inset with this number of the JOURNAL.

Many members will have noted with interest the answer given by the First Commissioner of Works in the House of Commons to a question by Miss Cazalet, the member for East Islington, who asked if he would state how the architect for the new Government offices in Whitehall Gardens would be appointed, and whether the designs would be submitted to the Royal Fine Art Commission for their observations before any decision was taken to proceed with the erection of such new buildings.

Mr. Ormsby-Gore, in reply, said:—"The architect will be selected by a committee consisting of the chairman of the Royal Fine Art Commission, the President of the Royal Institute of British Architects, the President of the Royal Academy, the Chief Architect of H.M. Office of Works, and myself as chairman. The answer to the second part of the question is in the affirmative."

On 17 July, Mr. Ormsby-Gore, replying to a question about the development of the Calton Jail site in Edinburgh, was again able to give an answer of satisfaction to architects, saying that the Royal Fine Art Commission for Scotland were being consulted on, and had still under consideration, various questions relating to the choice and method of development of the Calton site in Edinburgh. He was awaiting their report, which he hoped to receive at an early date. On the assumption that agreement was reached in regard to the use of the Calton site, the Government had decided that the design

of the building should be entrusted to an architect in private practice. The architect would be selected by a special committee, including the Secretary of State for Scotland and himself, on which, among others, the Royal Fine Art Commission for Scotland and the Royal Incorporation of Architects in Scotland would be invited to be represented. The architect's design would in due course be submitted to the Royal Fine Art Commission for Scotland and the Corporation of the City of Edinburgh. In order to avoid any misunderstanding, he would add that the Government had not taken, and would not take, any decision as to whether they would or would not proceed with the actual construction of the building until all these preliminaries were completed and they were in a position to consider final plans and estimates of cost.

The appointments have now been made to the General and Executive Committees of the Royal Academy Exhibition of Contemporary British Art in Industry, which is to be held at Burlington House in the spring of 1935. Sir Giles Gilbert Scott, Sir Raymond Unwin and Mr. Arthur J. Davis are all members of the general committee, Sir Giles and Mr. Davis also being on the Executive. The general committee, which is widely representative, is composed of members of the Royal Academy and the Royal Society of Arts who are in no way interested as industrial exhibitors.

The seven classes under which works shall be exhibited have been arranged as follows :—

TEXTILES. Printed and woven fabrics for ladies' and men's wearing apparel, furnishings and upholstery; lace; damask and other table cloths; carpets, rugs and floor coverings; embroidery. CERAMICS AND GLASS. Pottery of all kinds, including tiles; plain and decorative glassware. INTERIOR DECORATION AND FURNITURE. Articles of wood, metal, or other materials for interior decoration; furniture; wireless and gramophone cabinets; appliances of all kinds; picture frames; carvings in wood and other materials; plaster-work; floor materials of wood, stone, rubber or composition; wall-paper and wall-hangings.

DOMESTIC EQUIPMENT. Stoves; fireplaces; surrounds and mantelpieces; electric, gas and other lighting fittings; electric and other domestic utensils. GOLDSMITHS' AND SILVERSMITHS' WORK AND JEWELLERY, including both real and artificial jewels; table cutlery; toilet requisites; clocks; sporting cups and similar articles. LEATHERWARE. Plain and fancy leather goods. PRINTING. Book production; book bindings; letterpress; prints in colour and monochrome; posters; showcards and other forms of commercial art, including containers and labels.

The Library has recently received through the generosity of the executors of Mr. Walter Ledger, a member who died a few years ago, several architectural books of value, including a very fine copy of the first edition of Kent's *Inigo Jones*, a work of especial interest to us, since we possess the beautiful drawings made by Henry Flitcroft to illustrate it. Mr. Ledger, of whom we publish a belated obituary by a close friend of his on page 780, was a man of unusual erudition and wealth of interests, which ranged from little known byp aths of horticulture to seafaring *à la* Pugin, whom he also emulated, not, as far as we know, consciously, in his habit of wearing sailor's dress on all occasions. His wide interests outside professional architecture took him from active practice many years ago.

As a means of obtaining additional funds for the relief of unemployed architects in the United States, the women's division of the Architects' Emergency Committee of New York has had made a special architects' tea-set, the proceeds from the sale of which will go to the fund. The Emergency Committee has sent two of the sets to this country—one to Her Majesty the Queen, who has expressed her pleasure at the thought which prompted the gift, and one, through the chairman, Mr. Clarence Levi, to the R.I.B.A. as evidence of the cordial relations existing between the members of the profession in the two countries.

The tea-set is a reproduction of a colonial model and is made in the best quality of Lenox china, decorated with views of famous colonial buildings in sepia on an ivory body trimmed with lines of purple lustre. The first coat of arms of the United States is on the reverse of the teapot, the cream jug and the sugar basin. The views, which are taken from old prints, have been redrawn for the set by Mr. Schell Lewis.

About 18 months ago the Architectural Press produced a small booklet called *The Adventure of Building* which presented in admirably clear language the layman's case for the architect-built house. Before the end of 1932 four reprintings had been made and now a new edition has been published with the same text but with new illustrations. The only possible reproach that could have been made with effect against the earlier edition was that the houses illustrated were mostly of just too expensive a type to be put forward as alternatives to the wares of the speculative builder. The new edition is, however, illustrated by 16 houses almost all of which are direct and fair alternatives to the usual jerry-built dwellings with which they are in competition. 51,000 copies of *The Adventure of Building* have now been printed, which is certainly enough to prove that the demand for such an excellent instrument of propaganda existed and that good use has been made of it. We hope that the new edition will be enthusiastically taken up by the profession, which must be responsible for its distribution to laymen. The booklet can be obtained from the Architectural Press, 9, Queen Anne's Gate and block orders for a considerable number will be given special rates. The normal price is 6d.

Photograph by B. C. Adkin

FIG. 1.—SITE OF OLYMPIA
Cypresses in the foreground and Aleppo pines in the middle distance

THE GEOLOGICAL BASIS OF GREEK AND ROMAN FORMS[1]

BY HOPE BAGENAL

GREECE

GREECE before it was deforested must have been lovelier even than it is to-day. "The groves of the Ilissos," says Jebb in his book on modern Greece, "have dwindled sadly since the days when Socrates and Phædrus sought their shelter from the summer noon. Those bowery haunts of the nightingale by the Cephisus, which Sophocles celebrates, bloom no longer with the golden-eyed crocus and the clustering bells of the narcissus."

In classic times there must have been in Greece not only the grandeur of shape and delicacy of colouring that strikes the traveller to-day, but also, in the valleys and foothills, a fine furniture of woodland which held the moisture and regulated the water supply.[2] The moisture would have meant more meadow-land and tillage—larger olive trees in the valleys. And then, as now, there was never far off the sea with its salt airs and gift of clear but soft colouring. Ancient Greece was the product indeed of these three—of fertile and secluded glen, of forest clad mountain, and of the sea with its adventure and communication always breaking down tribal isolation and tending to stimulate and fertilise a highly gifted people.

The common woodland tree was probably the "Aleppo pine,"[3] similar to those that still whisper beside the Alphæos at Olympia (*Fig. 1*). Often on the river's edge the hack of the bronze adze, and the ring of iron, must have been heard. Behind all Greek architecture stands the carpenter. He does not stand alone; but he is always there, visible in many details, and his spirit always keeping the building framed and smooth. Beside him there were the miner and stone worker. The mineral wealth of Greece was, and is, considerable. Under that brilliant landscape there lie hidden limestones, marbles, slates, sandstone, conglomerates, schists; and ores of all kinds, such as

[1] Adapted from a paper read before the Art Workers' Guild in October 1931.

[2] The deforestation is ascribed to the nibbling of herds of goats, and also to forest fires.

[3] There were also cedar, juniper, alder, ilex and a maple tree called sugeia, described by Vitruvius as used for making yokes for oxen.

Photograph by the Author

FIG. 2.—ATHENS. THE AREOPAGUS

Photograph by the Author

FIG. 4.—ANTA TRADITION IN A MODERN GREEK HOUSE

copper, silver, zinc, gold, emery, iron pyrites; also brick earths, potter's earth, fuller's earth. I am aware that architects hesitate to open a geological map because of the inartistic colouring. But Greece is not so ugly on the Carte Internationale but that a glance can be endured and found profitable. There is the green of the predominating Cretaceous rocks containing the limestones of Bæotia and the Peloponnesus. There is the pale red representing the older marbles and schists of Attica, Eubeoa, the Cyclades, and the Taygetus range in the south. Then there are the Tertiary beds containing the Poros stone coloured a pale buff extending round the west and north of the Peloponnesus and into Attica, and a patch of grey conveying the upper Jurassic limestones in Argolis.

Greece is briefly a much folded limestone peninsula of which important limestone areas have been converted into marbles by fusion due to the heat generated by earth pressures. On the Areopagus (*Fig. 2*) the metamorphosis can be seen in the partially crystallised rocks: limestones and true marbles are side by side. The denudation and scouring that has followed the folding has left certain spur hills suitable for fortifications. Thus we read that Athena, when she founded Athens, ordered that the house of Erectheus was to be built on the Acropolis and that Lycabettus was to serve as a quarry. In Attica the uppermost rocks—said to be of the Cretaceous series—include an upper grey limestone and a lower yellowish limestone "with intervening green slates and marls."[4] Also at a later period volcanic movements have caused granites and gabbios to intrude, which have not only turned limestones into marbles but have left rich ore deposits—galena, zinc, calamite, limonite, iron and manganese, which have in turn coloured these upper marbles. Then below the Cretaceous rocks come the lower marbles and crystalline schists older in age. This, I suppose, is the geological explanation of the red and green cipollinos first described by Brindley[5] as *overlaying* the white marble on Mount Pentelicus. The fact bears directly on the history of

[4] Wray, D. A. *Greece: its Geology and Mineral Resources. Mining Magazine*, January 1929.

[5] Brindley, W. *Marble : its Uses as Suggested by the Past.* R.I.B.A. TRANSACTIONS, Vol. iii, New Series (1887), p. 45.

design. The Greeks had all round them beautifully figured coloured marbles on the surface, but did not use them. They mined beneath them for the white Pentelic. It was not for hundreds of years that the Romans discovered Greece as a quarry of coloured and figured marbles. What is the explanation of this? Let us for a moment look at another part of the map.

The hills round Tiryns, ascribed to the Jurassic series, give a hard compact limestone in inclined beds with many cleavages: these are more easily extracted in irregular polygonal blocks. In the fortress walls of Tiryns (*Frontispiece*) these blocks are not shaped at all or only very roughly shaped, and their interstices are filled with clay. The stones are enormous and convey a true "Cyclopean" impression. But polygonal walling requires considerable skill in erecting. As it is not coursed or bonded it requires retaining at angles and openings: it is likely that the bastions at Mycene acted as *parastades* or *antae* between which the runs of walling were piled up. And when we turn to the smaller polygonal or rubble walling of the megaron above, here the wooden anta or heavy upright post played the same part. It served to retain a loosely built wall at ends and openings as well as to support lintel or wall plate. Wooden jamb and anta had the same function. And the Greeks always retained the *rationale* of the anta, and did not let it repeat itself meaninglessly and become a "pilaster." The anta can be seen in modern Greek houses to-day expressing its part as a retaining post to polygonal or mud-brick walls (*Fig. 4*).

The accessibility of limestones at all periods meant also the easy burning of lime, and hence the continuous use of plasters. The polygonal or rubble or mud-brick wall, whether of megaron or temple, in the past (as of the modern house), was easily plastered over, giving a smooth, bright surface tempting to decorate. Now this plaster tradition was strengthened by the nature of the commonest building stone in Greece, namely "Poros" stone, sometimes called Shell-conglomerate. Its name conveys its nature: it is full of cavities, and gives a good key to plaster. It is sometimes wrongly called tufa. This stone is found in the Tertiary beds forming a western and northern margin to the Peloponnesus and extending into Attica. Poros building can be studied in Athens and Olympia. Let us first consider Olympia. Here there is evidence of an early timber and mud-brick technique in the temple of Hera and of a Poros stone technique in the temple of Zeus. In the temple of Hera the stonework consisted only of the stylobate and the plinth to the cella wall. This plinth 3 ft. high has slots on its upper edge at regular intervals for gripping a wooden plate and above it there was almost certainly a timber framing having mud brick panels filling in between antae. (It was owing to the crumbling of these mud brick walls that a soft bed was formed which broke the fall of the Hermes of Praxitiles and partially preserved it.) The clay walls were plastered and painted and on the wooden cornice terra-cotta revetments were applied. Now this tradition was obviously imitated in the great temple of Zeus built of Poros stone. Portions of stone, including caps, can be seen plastered over, still lying on the site. The nature of the stone permitted, even encouraged, the *continuing of the plaster tradition, as to its surface.* But also a stone structure obviously gave a better home for votive sculpture. The gable ends and metope openings supporting in the early temples, only wood or terra-cotta figures, were adapted in a stone structure to the heavier stone or marble statue. In so called archaic temples marble metopes are found in a limestone frieze as at Selinus in Sicily. Thus marble, the sculptor's material, comes to take its place in the temple technique. In the Zeus temple at Olympia the metopes and the magnificent pediment figures were of Parian marble probably carried round by sea. Obviously it is but a step to the building of the whole temple in marble.

Here let us pause for a moment to realise how a smooth jointless temple, flood lit from its stylobate as from a mirror, must have asked for colour decoration both in surface and line. Thinking of classic architecture as we tend to do in terms of a matt surface in limestone, it is easy to forget this, and all that it means artistically. But for the Greeks the temple when built was only just begun. Then, as now, there were coloured earths—ochres, red oxides, green chalk from Smyrna, with which to make colour washes to multiply tones and sharpen lines—above all to darken the triglyphs. (To-day in Greece one sees houses and sheds and railway stations banded with colours under the cornices.) There is no doubt that colour was applied to the Zeus temple at Olympia, both as pattern on the cyma and to make more vivid certain parts of the sculpture.

And equally important was the metal work and above all the gold. The mines of Laurium in Attica—famous in antiquity and reopened in recent years—yielded silver, copper, lead and zinc. Gold came from Thrace and Macedonia, and especially from a famous gold mine in the neighbourhood of Mt. Pangaeum, in the mountainous tract between the Struma and the Mesta rivers. This gold mine was mentioned both by Herodotus and Strabo, but was afterwards lost sight of. Now Greek architecture

owes much to that burnished art described in Homer —the product of the forge of Hephæstos—Hephæstos the smith whom the Greeks acknowledged to be the husband of Aphrodite herself. Walter Pater pointed out long ago that the hammered work of the smith—"which in a certain *naïveté* and vigour is still of all work the most expressive of actual contact with dexterous fingers"—underlies the quality of Greek art. Certainly in ornament of all kinds gold can play an important part, a part which, I think, is only now being fully understood by designers. Its presence will harmonise a strong polychromatic design. The Zeus temple at Olympia probably had on its roof, vases, tripods, and a Nike in gilded bronze, and golden shields riveted upon the entablature. Then it would have had, like the house of Alcinous in the Odyssey, "a gleam as it were of sun or moon." The points of gold must have harmonised a brilliantly coloured design. This is important from the designers' point of view. We have to consider those wonderful west gable statues as quickened by colour and gold : and just as the sculptor darkened the eyelids of his figures and made their helmets gleam, so *the same art* accentuated the rhythm of the triglyphs by a darker tone, and dyed the tenia band below them.

Would that time allowed to linger here in Olympia to discuss the influence on art of a school of sculpture and of athletics combined; to see the *ergasterion* or "workshop" of Phidias where there was an "altar to all the gods in common" and in which the great cryselephantine statue of Zeus was made; and finally to enter the temple itself and see the large calm god "whose beauty," said Quintillian, "seems to have added something to the received religion." But we cannot now linger. What we have to remember is *that Greek temple architecture was the outside of a cryselephantine shrine*. Phidias returned from Olympia to Athens with the vital experience of the Zeus temple behind him in order to rebuild the Parthenon. The older temples on the Acropolis at Athens had been of Poros stone, but Themistocles had used Pentelic marble for the columns of the Athens temple which had been burnt by the Persians. There was doubtless

Photograph by the Author

FIG. 5.—STYLOBATE OF THE PARTHENON, SHOWING THE CURVATURE

discussion of the material to be used in the new temple: we can almost hear him say: "Why not build the whole of marble?" I need not point out what that perfection of material would mean to Phidias, cabinet-maker to the Gods. But I suggest that it is vital to a proper understanding of Greek building art. And in Athens it was comparatively easy to build the whole temple of Pentelic. A traveller standing on the Acropolis can see beyond Lycabettus the faint white screes on the slopes of Pentelicus. The ancient quarries of the white marble are on the south-western side of the highest peak, the topmost at a height of over 3,000 ft. The ancient slide-way still exists.[6] The stone is almost pure carbonate of lime; when broken, it gives a glistening white fracture. "Parian marble," says Frazer, "resembles crystallised sugar; Pentelic marble resembles solidified milk." Pentelic does not remain like Parian a dazzling white, but, on weathering, takes a thin golden rust. But when new and rubbed down with ochre to a soft ivory, we can imagine what a field it was. To the curves and optical correction begun on the earlier poros buildings, it gave a new and more subtle development. In its nature and resistances lay hidden the last refinements of that art which included the finest crafts the world has seen, and was a cosmogony of the soil and of the genius of a people.

Photograph by the Author

FIG. 7.—ALBULE, BELOW TIVOLI
Stream depositing Travertine

ROME

Between us and that delicate Attic blaze there is always interposed the tremendous bulk of Rome. This is not surprising, because rich as Greece was in materials—Rome was richer. A remarkable geological narrative leads step by step to the building wealth of Rome. I shall give here only the bare record, which is sufficiently marvellous.

A general subsidence of the whole of central Italy in the Pliocene period left the Appenines and sub-Appenines invaded by the sea on their west side. The range of the Sabine, Pancrazio and Amelia hills containing limestones then stood looking over a series of great lakes that are now the Tiber valley. The Maremma and Campagna were under water.[7] During this period the Pliocene clays were laid down. They can be seen in Rome at the lower edge of the Palatine, near the back wall of S. Maria Antiqua, and also specially between the Janiculum and the Vatican. These clays form under the city a great base of brick earth called *creta figulina*. Lanciani mentions five valleys in the neighbourhood of

[6] Brindley, W., op. cit.

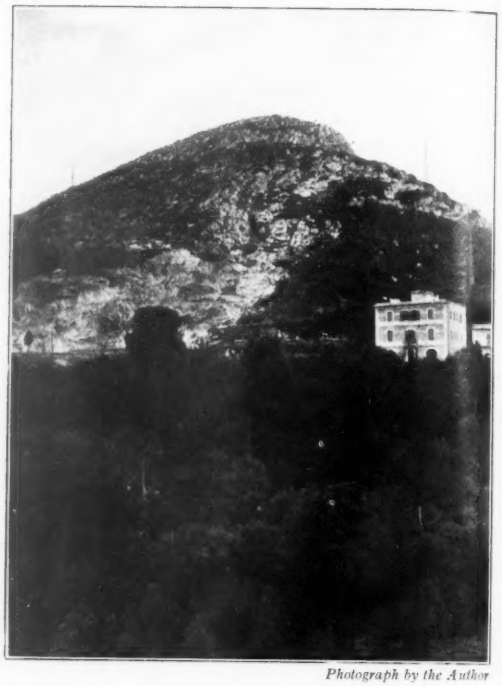
[7] For a detailed account of these movements, see Du Riche Preller, *Italian Mountain Geology*, 1923, Part III, p. 14.

Monti della Creta, which are "not the work of Nature, but the result of excavations for *creta figulina* which began 2,300 years ago, and have never been interrupted since."[8]

Next, during the Quaternary or Glacial epoch, there followed an uprising of the land, and at the same time great volcanic activity. The Arno, Tiber, and Serchio valleys slowly separated into descending chains of lake basins, finally leaving lake Trasimene as a kind of Pliocene pool. The clay of Southern Etruria and of the Campagna, lately a sea bed, now became the scene of a series of eruptions on a volcanic axis marked to-day by the crater lakes of Albano Bracciano and Bolsena. The Alban volcanoes on the south-east of the Campagna, and the Sabatini on the north, ejected at different times sands, a series of ashes, and fragments of many kinds and streams of lava. Then the River Tiber, many times dammed up, washed at the bases of the ash heaps, and alternately formed a lake, and then, by bursting its dam, drained itself away. Thus, there came to be formed "the seven hills of Rome" at a fordable point in a very swift flowing and active river. The first ash that fell hardened into a flaky dark grey tufa known as cappellaccio, which crops out above the clay at the foot of nearly all the hills of Rome. Cappellaccio is a poor earthy stone, but was regularly used in Etruscan times.[9]

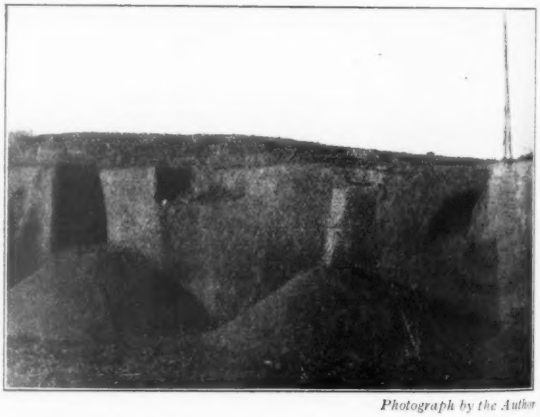
In this first eruptive period, hot springs broke out in the hills and began carrying down lime in solution and depositing it in large areas in the basin of what is now the River Anio; this process has continued ever since. Thus, the more distant rock limestones were transferred in solution to an area more accessible to the future city, and there deposited—in other words, the Roman travertine beds began to form. In *Fig. 6* is shown a limestone quarry on the hills behind Tivoli. In *Fig. 7* a hot stream can be seen at Albule in the plain below, which is heavily charged with lime in solution, and is depositing travertine on its bed, and even on the plants on its banks.

Next, after a period of rest, a dark red ash began to rain: it fell on a comparatively dry bed, and was not subsequently compressed into a tufa: it is the most valuable of all the geological gifts—pozzolana. This material when mixed with lime forms a natural hydraulic cement. It is really a very fine active



Photograph by the Author

FIG 6.—LIMESTONE HILLS BEHIND TIVOLI



Photograph by the Author

FIG. 8.—A POZZOLANA PIT NEAR ROME

silica and the modern scientific term "pozzolanic" conveys a special chemical combination in the setting process. Pozzolana gave to Roman builders a special mortar and a special concrete. The red pozzolana of the early eruption was mined by

[8] *Ruins and Excavations of Ancient Rome*, p. 42.

[9] For a full account of the successive tufa deposits and their uses for building, the reader is referred to the remarkable research of Dr. Tenney Frank, published in Vol. III of the Papers and Monographs of the American Academy in Rome under the title "Roman Buildings of the Republic: an attempt to date them from their materials."

FIG. 9.—OSTIA: Selce Paving

Roman builders outside all the eastern gates of Rome. Later, deposits can be seen on walks round Rome, *Fig 8.* It has only to be dug out and passed through a rough sieve and can be driven in lorries straight to the site. Roman dome and vault are, of course, largely due to the tensile strength of pozzolanic concrete. Vitruvius, speaking of pozzolana, refers to the *pulvis* of the Bay of Naples, and apparently did not realise that the sand from pits near Rome mentioned by him as just "sand" (*harena fossicia*) had also hydraulic properties, and was in fact as good a pozzolana as the Naples ash: though (as Tenney Frank points out) he recognises that the pit sand is stronger than river or sea sand, because he mentions that it requires less lime—namely, a three to one mix as compared to a two to one.

Next came eruptions of ash which fell into water due to the damming of the Tiber and formed various stratified tufas, including those known as Anio stone (the lapis Ruber of Vitruvius) and *Monte Verde* stone. Then an immense lava stream now known as the *Capo di Bove* flowed from the Alban hills towards Rome along a line afterwards followed by the Appian Way, and stopped at a convenient distance just near the spot where now stands the tomb of Cecilia Metalla. This lava gives a hard, grey stone, not stratified, known as silex, or *selce*. It has always been, and is still, the material with which Roman streets are paved, either in polygonal or rectangular blocks. A street with paving of this kind in Ostia is shown in *Fig. 9.* Also *selce* formed, when broken up, the heaviest and strongest ballast for Roman concrete.

Then the Alban hills gave vent to *Peperino*, or Alban stone—a fine grained tufa—forming in the process the crater now known as the Alban lake, and also *Sperone*, or Gabine stone, of which the Tabularium was built. *Peperino* is a breccia or paste of ash containing rock fragments including limestone. It is the hardest and closest of the tufas, and was used for inscriptions by the Romans until displaced by Travertine in the second century B.C.

It is worth pointing out at this juncture that the craters in the Alban hills later became lakes and provided high-level reservoirs that required only to be tapped to give the city its magnificent water supply.

Meanwhile, on the Etruscan side of the Tiber, the Sabatini volcanoes contributed the rough *Fidenæ* stone containing black scoriæ and the more serviceable tufa material known from its quarries as *Grotto Oscura*. This latter is a friable greyish yellow stone used in part of the "Servian Wall" and in the first Basilica Aemilia. It is specially important for this reason, that it is the lightest of the tufas, and provided exactly the right material for vault filling. Quantities of it were used for this purpose during the Empire.

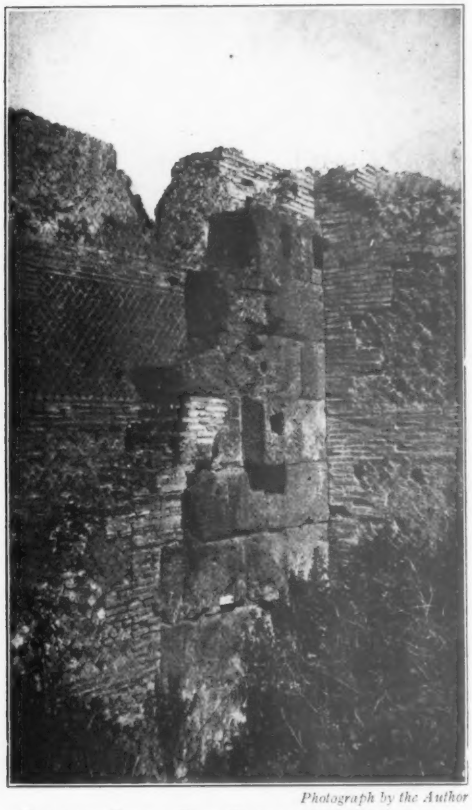
Later deposits of ash can be seen in road cuttings round Rome, often with thin intercalations due to water deposits between the intervals of volcanic activity, *Fig. 10.*

Here, then, is a rough outline of Roman material. Vernon Lee once pointed out to the present writer that when the Tiber is in flood, rushing down a turbid coffee colour, its water is in fact an emulsion of all the building materials that give colour to the roofs and walls of Rome.

Two important facts stand out bearing on the history of design: (i) Tufa was a dull stone; it had no surface brightness; and (ii) many varieties weathered badly. For these two reasons the plaster coating to structure was important, and there was plenty of limestone at Tivoli and Monticelli used, not for walling, but for lime burning.

Photograph by the Author

FIG. 10.—A ROAD CUTTING, SHOWING RECENT ASH DEPOSITS



Photograph by the Author

FIG. 11.—OSTIA: OPUS QUADRATUM HAVING LATER WALLS BONDED INTO IT

Plaster was also required both for the mud-brick technique and for the early tufa rubble work known as *opus incertum*. To-day in Rome, the ordinary villa is still built in *opus incertum*. Broken tufa dug from the nearest hill is dumped on the site and likewise a heap of pozzolana and of bricks. Brick courses bond in the rubble and retain it at angles and openings: the walls rise with great rapidity and then a good coat of plaster is slapped over the whole and given a red or amber colour-wash. The Roman baroque style in Renaissance times has its roots in this stucco or tufa technique.

But, unlike the Greek Poros stone, the earthy Roman tufas did not give a first rate key to the plaster, and hence the Roman technique of artificial keying by means of nails. Vitruvius specially mentions the influence of some tufas on lime. But a plaster covering even to the fine *opus testaceum* (baked brickwork as distinguished from mud brickwork) and likewise to the *opus reticulatum* was generally the rule, although it is now supposed that the beautiful brickwork of Ostia was not plastered. An efficient marble-dust stucco was developed and universally used, and this predisposed to the wholesale coating of buildings during the Empire with marble in slabs as at the Temple of Concord. The marble first used was white marble quarried in the Apuan Alps at Luna, near Carrara, known as Marmor Lunensis, and brought by sea. There were special marble wharves on the Tiber, and so much marble was accumulated in Rome that the city served as a source of supply for Italian building all through the Middle Ages. The white Luna marble was soon followed by coloured varieties from Egypt, Greece and Africa. As one example only, *Giallo Antico*, from near Tunis, was used as a wall lining to the palace of the Cæsars. Hence developed early in the Empire the poly-

chromatic marble technique the tradition of which survives in the Byzantine interiors of St. Sophia and St. Mark's and on the façades of the churches of Orvieto and Siena.

Rome did not use marble as the Greeks used it, that is to say as a perfect material for craftsmanship, but used it instead as a protecting skin and *also* for its spectacular quality.

But the nature of Tufa also permitted its easy squaring into large regular units, and hence the building of regularly coursed and bonded walls known as *opus quadratum* (*Fig. 11*). This may originally have been in imitation of the kind of Etruscan walling seen at Falerii. Now, this was the opposite kind of walling to that we have just considered. The mortar joints in *opus quadratum* are exceedingly fine, and the rugged monotony of the wall surface gives considerable character. The character might be defined as massive strength carrying conviction by its essential quality. Now, the Romans were always testing the different kinds of tufa—each in turn was used and discarded (Tenney Frank, indeed, in the Monograph quoted, shows how this fact can be used to establish the dating of buildings). Then the splendid qualities of Travertine were discovered in the second century B.C. The Travertine lay under the sub-soil of the Campagna below Tivoli in a flat deposit, now terraced after the removal of (as calculated by Lanciani) some $5\frac{1}{2}$ million cubic feet of stone. Roman travertine is one of those materials capable of developing or destroying a whole national art. It is strong and tough under load; will weather well; is equally satisfactory whether used in courses or vertical slabs; has a beautiful honey-coloured texture, and in addition will carve and take inscriptions. Travertine lent itself both to the spectacular surface technique and also to the massive masonry. It began to be used for key-stones, springers, bearing stones, first in the tufa walling. It was used thus in the Pons Mulvius 109 B.C. It is, in my opinion, at its best and most "Roman" in the Forum of Augustus, where it is used to articulate the greater stresses in certain positions. But no one who has been to Rome will deny the spectacular quality of travertine—whether in the Colosseum or in St. Peter's as ashlar, whether in the Tomb of Cecilia Metella or the Palazzo Giraud as channelled slabs secretly jointed, or as cleverly imitated in a dragged stucco work in a modern Roman church. It was not discovered early enough to give a distinctively Latin development to the early Etruscan temple but instead, by its adaptability, facilitated the superseding of Etruscan by Hellenistic temple forms. We are tempted to look on Roman work as a vulgarisation of Greek art forms on the one hand and on the other hand as great structure only. Is this the whole truth? Although Rome was the metropolitan city of the Hellenistic world and always tended to draw artists to her from elsewhere, yet in architecture she gave them a set of materials that were peculiarly her own. Roman builders were inventive and experimental rather than imaginative. They failed to understand the inner meaning of the Greek Orders, namely, as three separate modes, or keys, of structure, each complete and organic in itself. But in my view they made at least two vital contributions to building art. First, though they destroyed the Doric and Ionic orders artistically, they took the delicate Greek Corinthian and developed it quite legitimately into a Roman art and into a principle of ornament. Roman Corinthian is most characteristic when the shaft is a smooth coloured marble monolith and the cap is a showy cabbage (*Fig. 12*). Roman Corinthian shifts the full orchestration of architecture out of marble into a limestone, that is, to Travertine or Istrian stone or Isle de Paris or Portland limestones. "Renaissance classic" as we know it begins, not with Bramante, but with the Roman Travertine temples of the first century B.C. It has a certain universality and has survived, handed on through Vitruvius, Palladio, Inigo Jones, the French Beaux Arts, to our own day; appealing to general European taste. It is the architecture of the *Spetticolo*. Roman Corinthian detail has not only formed the basis of Renaissance ornament but penetrated and influenced mediæval art as at Auxerre and Canterbury.

Secondly, the Romans made "vault" and "dome" their own, and here the contribution to design of the fertile local materials must be vital. Even if we admit with Strzygowski every possible contribution from the East to the Roman development of dome and vault there yet remains the fact of the gift of pozzolana, and to ignore the influence on the history of structure of such a material shows an ignorance of the nature of design processes. But another contribution is found at Rome which is unique. The Romans alone distinguished clearly between the plan systems appropriate for dome and vault. When they wished to cover a *radial* space they used dome; when they wished to cover a *rectangular* space they used groined vault. In the plans of the great Thermæ this principle is clearly visible. The fact that Roman builders did not put a dome over a square on large buildings does not constitute a criticism, but was an admirable piece of logic. They could have done so at least as easily as the Byzantine builders did later, if they had wished. They knew what a pendentive was and used

FIG. 12.—ROME : TEMPLE OF ANTONINUS AND FAUSTINA
Before the Restoration of the Podium

dome over square in those comparatively small structures, their tombs. But there is no large pendentive in characteristic buildings at home. The force and significance of this fact has been obscured by the combats of the distinguished archæologists. Architects can see in it a design principle of the first importance in action. The Roman builders are here doing what the great Greeks did frequently, namely, limited and defined a design problem for a purpose. The dome is, in fact, a radial element requiring radial support. This was not recognised by Wren, who set his piers non-radially under the dome of St. Paul's, and *was* recognised by Bentley, who put a central buttress in each bay of Westminster Cathedral. We find in Rome a remarkable series of radial plans, circle, hexagon, octagon, decagon, and we also find that interesting class of plans with concave abutments round a circle of which the Mausoleum of Augustus is an example.[10] These plans illustrate the same design principle and are the complement of the fact that we find in Rome no large pendentive. The result was an act of simplification which has certainly contributed to the survival of Roman structure. It has also another interest for us. It must have been conscious and was asserted in the face of a technical complication and multiplicity somewhat resembling our own to-day. It was employed for the sake of a unity and an order in a world that had become both chaotic and cosmopolitan.

It is time that we ourselves introduce at some point into building and engineering theory the idea of desirable simplification.

[10] Many radial plans of all kinds were measured up by the Renaissance antiquarians in Rome and, now disappeared, can be seen in Mongeri's *Rovine* and in Rivoira's *Roman Architecture*.

The Temple of Diana at Ephesus

By ARTHUR E. HENDERSON, F.S.A., F.R.I.B.A.

A RECONSIDERATION of the plan and design of the Temple of Diana, illustrated by photographs of a model* recently made under the author's supervision at the British Museum.

The Temple of Diana at Ephesus was discovered by G. J. Wood in 1869-70, when much material was brought home to the British Museum. Wood, however, did not sufficiently appreciate the fact that the ruins discovered were of two periods, the Hellenistic extending beyond, and entirely enclosing, the foundations of an archaic structure. Fortunately this was discovered later when the fragments were being examined, so that the Museum was able to place many of the sculptures and details to face one another in the Ephesus Gallery.

In 1904-5 the Trustees sent an expedition to the site, with the late Dr. D. G. Hogarth as director and the present writer as architect, to re-examine the remains and to acquire further material.† The expedition not only discovered that the Hellenistic temple entirely enclosed the archaic remains, but several earlier structures had been treated also in the same way, five in all, and have been referred to as A, B, C, D and E; A, B and C being prehistoric, D archaic, of the sixth century, and E Hellenistic, of the fourth century B.C. Of the Hellenistic nothing remains except sporadic foundations and a few isolated fragments of pavement.

The first and most primitive was found to be of certainly earlier date than the seventh century B.C. This was a small yellow limestone platform in front of a green schist basis. Upon the former probably stood the altar, and in the latter was discovered a multitude of dedication offerings pointing to the probability that this was the base for a shrine.

The site of this primitive time must have been very nearly a swamp. It stood hardly a yard above the water level of the River Kaystros, shortly before it debouches into the bay of Ephesus.

The religious purpose of this shrine was to attract pilgrims to the reputed spot where Leto finally rested after being loved by Zeus, and driven from place to place by Hera. She here, it was said by tradition, give birth to the twins Apollo and Artemis. Zeus took compassion upon her and immediately a laurel tree sprang up and sheltered them.

Probably the site was chosen by a priest who, knowing of the Ortygian legend, found credulous people to believe him, because a fine tree of this species formed a feature in the landscape. It became honoured as sacred to the memory of the gods and the shrine was erected under its shadow. It may be fairly safe to say this tree or its successors existed until the final overthrow of the Hellenistic temple, and may give a reason for the open court within it.

Rebuilding on a larger scale occurred in due course; then there appears to be a long gap before the third temple of much larger dimensions was built of local yellow limestone.

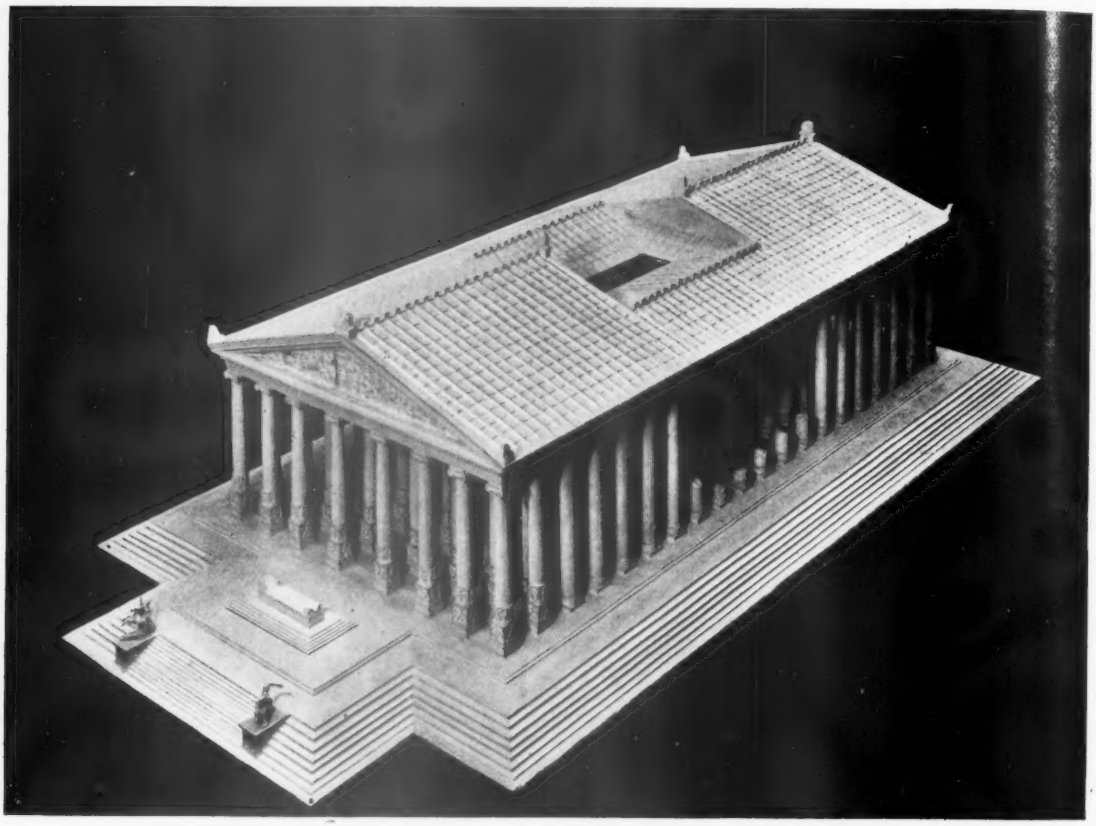
Things changed much for the better as the city became an important seaport, as exemplified by the determination of Crœsus to honour Ephesus by assisting the city in erecting the greatest and most magnificent temple in Asia. This was carried out and many of its beautiful details and sculptures are now in the Museum. The foundations of blue limestone were very carefully laid on a bedding of light coloured clay; very little settlement was discovered, even though the massive foundation of the Hellenistic Temple was directly laid upon it. The floor, walls and columns were of a crystalline grained white marble, painted various colours, and the roof was of wood covered with terra-cotta tiles. In the year 356 a madman called Herostratus set it on fire, causing its total destruction.

Alexander the Great was born that year, and when he rose in power he determined not to be outdone by a former local sovereign and ordered the temple to be rebuilt in such grandeur as again to surpass all other temples in magnificence. There can be no doubt that the Ephesians more than accomplished this. Certainly the Artemision was the greatest and finest temple honouring a deity at the time St. Paul visited Ephesus.

No discovery has come to light as to how its glory ended, but the most probable explanation is that an earthquake cracked the architraves and threw down many columns. Gradually Ephesus ceased to be such an important seaport and centre of culture, and by A.D. 161 the worship of the goddess was already beginning to lose its influence. In the reign of Gallenus, 260-268, the temple is said to have been burnt by the Goths, while at the same time Christianity was gaining adherents, the cult of Artemis, the Virgin protector of maternity, being easily transferred to that of the Virgin Mother of Christ, while the locality was particularly favourable to Christian influences, for local tradition has it that St. John lived in a house on the upper slopes of Mount Solmissos, which house is still a place of pilgrimage, not so much on account of St. John, but for the blessed Virgin. Holy

* This model and the working drawings were exhibited at the R.I.B.A. Galleries from 28 June to 5 July 1932, and can now be seen on application to the Greek and Roman Dept., British Museum.

† The results of the expedition have been fully set out in *Excavations at Ephesus with Atlas*, British Museum, 1908. Also R.I.B.A. JOURNAL, 5 December 1908 and 23 January 1915.



MODEL OF THE TEMPLE OF DIANA OF EPHESUS
View from south-west

Writ states that Christ at his crucifixion gave his Mother into the charge of St. John ; therefore she lived with him. Consequently, it was from here that the twelve Apostles, who were miraculously gathered together, saw her pass away and her Son carry her soul to Heaven to be crowned by God His Father.

A small church was fitted into the cella of the ruin, probably serving until the great Church of St. John on the high ground to the east was built by the order of Justinian in the sixth century. Much of the temple was used for the great Byzantine fortress farther up the hill, forming the acropolis. Later, the Seljuk occupied the district and built a beautiful mosque with further plunder. Also a small mosque superseded the church.

By the time of modern travel the site had been covered and lost. It was left to the dogged determination of Wood to locate the site and uncover the scanty remains and surprise the western world with the magnificent fragments he brought home. Unfortunately no measured records seem to have been kept of the positions whence these were taken, and the site was left to take care of itself.

When the expedition of 1904-5 arrived it was found to be in a deplorable condition, some 14 to 18 feet below the surrounding level, and a high bank of dump surrounding it.

The ruins were covered with brushwood, debris and stagnant pools infested with insects. It was a most difficult and tedious task to clear and measure; added to this, it was several feet below saturation level and a pump had to be an extra trouble. Drainage to the sump was impossible in many cases, for the massive limestone foundations could not be cut away, thus leaving pools which often became putrid beneath the burning sun. The site was carefully examined and hundreds of levels taken which showed conclusively that the archaic temple had been demolished by the Hellenistic builder to about the base level of the pillars and that new foundations had been built upon its pavement, enclosing these bases and the lower courses of the walls. By so doing,

the new floor was raised 7½ feet above the old, yet the new walls stood exactly over the old, as shown by the limestone foundations, and column was placed over column, as exemplified by the bases still standing one above another, and other foundations indicate the same procedure. Besides this, massive foundations were extended beyond the archaic pavement, which carried the the great flights of steps erected on all four sides. These were run out as piers in line with the columns.

The spacing of the peristyle columns was accurately measured north, south and west, but, unfortunately, all record of the eastern had been removed, excepting a portion of the lowest step. Circumstantial evidence went to show that the eastern elevation was similar in design to the western. Here it should be pointed out that the principal front of the Artemision faced westward towards the bay of Ephesus ; this is not to suppose that the eastern façade was not used in the usual way.

The excavations revealed a drain from the interior of probably archaic date ; this would show that the temple was hypæthral, and the probability follows that the Hellenistic was identical, and is not a solitary example, as the great temple of Apollo Branchidæ at Didyma, not many miles distant, had a large open court internally. There were other indications in the arrangement of the foundation stones, such as straight joints, pointing to an open colonnade.

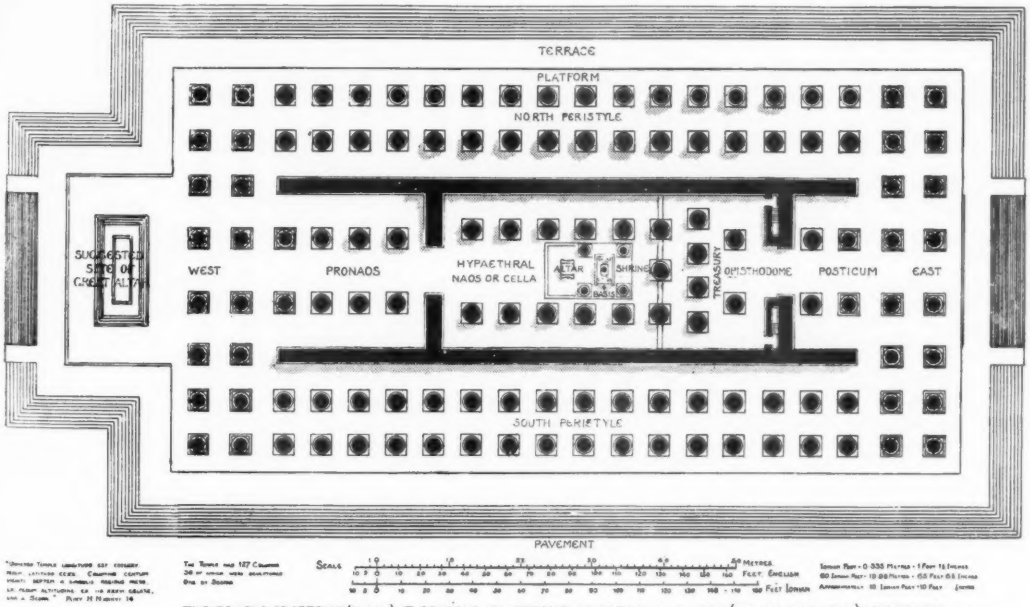
It was discovered that temple A had a small limestone platform upon which the altar may have stood; this was found to be exactly in the centre of the Hellenistic temple. Therefore, following tradition, the altar has been raised perpendicularly and is in the exact centre of the structure. Besides which, temple A had, a little farther eastward, a green schist basis in which the dedication deposit was discovered, so following on, exactly above this, has been placed a shrine containing the Cultus statue. This appears to be fairly certain, as a covered shrine was discovered at Didyma by Dr. Wiegand.

The first step was found in several places north, south and east, and much of the foundation remained, rising so rapidly as to form a terrace in front of the peristyles, but not to preclude an extra two steps in front of them to continue the tradition of the former temple. The foundations found precluded the steps rising between the columns.

The bases of the columns continued the tradition of the archaic with a large fluted taurus moulding resting on a filleted and double scotiæd drum upon a square plinth.

The bases of the 36 sculptured pedestals appear to have been treated in a similar manner, excepting that the square was continued from pedestal to plinth, and that a carved facia was used (instead of the scotiæd drum), as found at Didyma.

The capitals are of the Ionic order; the eyes of the volutes show that a method of setting out was used, but the masons were very free in their carving; consequently, the spirals do not unwind with regularity, as did the archaic; in fact, tradition only was being used, and not



THE TEMPLE OF ARTEMIS (DIANA) AT EPHESUS. RESTORED PLAN OF THE HELLENISTIC (IV TH CENTURY B.C.) STRUCTURE. A.E. Henderson FRIBA, FRIBA.

the true scientific method, but a clumsy form of centres and arcs.

The entablature above also follows the Asiatic Ionic order, and not the Attic, inasmuch as there is no frieze. Large brackets or modules carried a finely carved cymatium gutter with lion-headed water spouts about 5 feet apart. These were spaced as never to discharge over a pillar.

Nothing was discovered with regard to the shape of the roof, but by the evidence of coins it would appear to have been pedimented in conformity with the fashion of the period, but this does not apply to the archaic temple, which probably followed the Persian and Egyptian styles of having the cymatium gutter on all four faces.

After very mature consideration a very simple and probable explanation is put forward in the model, namely, two pavilions of equal size have been placed behind the western and eastern porticos, extending inwards in the western portion to the westward wall of the cella, and in the eastern to a row of four columns placed in a corresponding position. Two pavilions on either side are shown to unite them. This has been accomplished by making all the columns of the same height and placing the internal columns in alignment with the external peristyle.

The plan and model show a perron or projecting platform at the western end. This follows the plan of the archaic below, and the Great Altar has been placed therein. Search was made by the Austrian expedition and by Dr. Hogarth for this altar farther westward, but no vestige could be found.

It is natural that much controversy has waged around the plan, as measured and suggested by Wood, together with the statement of Pliny, "Universo Templo longitudo est CCCCXXV pedum, latitudo CCXX. Columnæ centum viginti septem a singulis regibus factæ, LX pedum altitudine; ex iis XXXVI carlatæ, una a Scopa," H.N. XXXVI, 14 (Fergusson's *History of Architecture, 1874*). The temple was 425 feet long and 220 feet wide; it had 127 columns, 60 feet high; 36 of these were sculptured and one by Scopas.

Pliny's height of the columns has been generally accepted, but none of his other measurements could be made to agree with Wood's measurements.

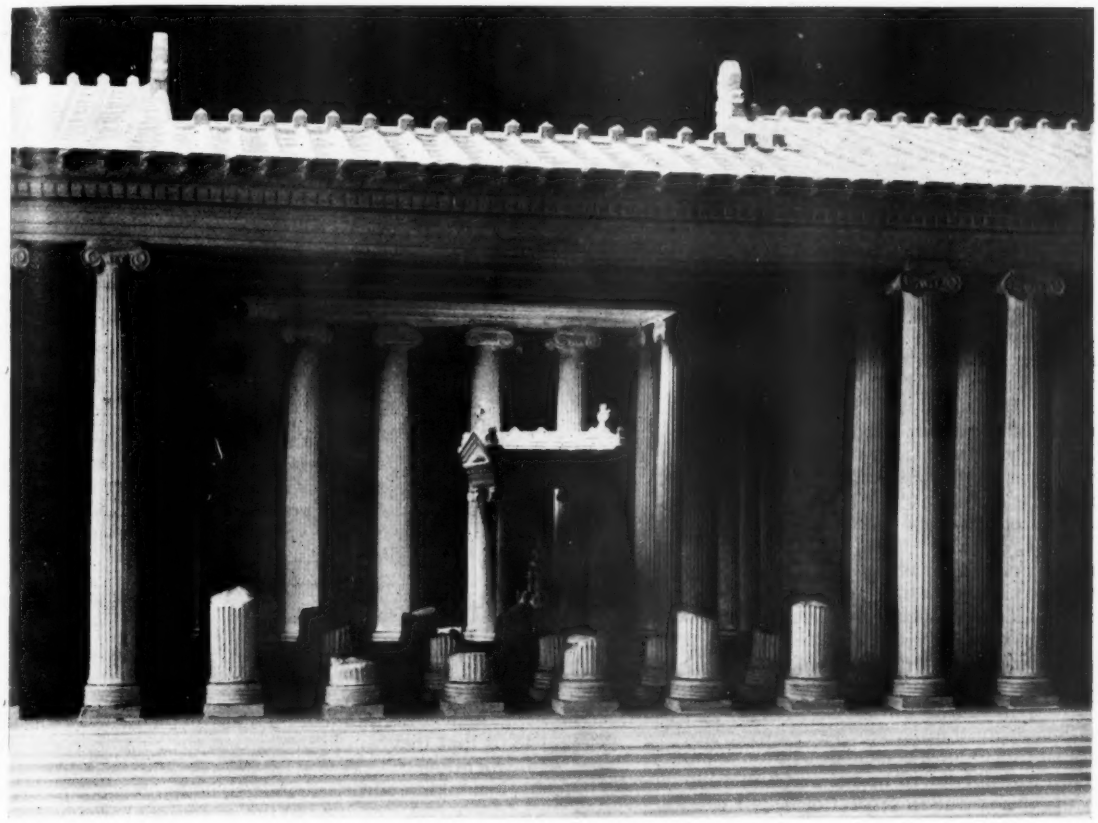
The Ionic foot would appear to be that of Heracles, 10 Ionian feet being equal to a fraction more than 10 feet 11 inches, English. This measurement being accepted, the height of the columns is 65 feet $6\frac{3}{4}$ inches, English; the entablature above, 10 Ionian feet, and the terrace ($9\frac{1}{2}$) and roof ($21\frac{1}{2}$) a further 30, making the total height from the pavement level to the ridge 100 Ionian feet.

Further confirmation of this measurement was found, namely, the width of the whole platform and steps from north to south was exactly 220 Ionian feet—that given by Pliny; this being so, Pliny's 425 feet would therefore appear to be no myth, for, with the perron or platform at the west end superimposed above that of the archaic temple, the total length is as Pliny states, and, as has been said, the perron probably carried the Great Altar, so is included in the temple's length.

The disposition of the columns has also been an unsolved problem, but, again, the expedition found the position of very many of these. There was a double row of eight and two further back "in antis" between the walls, making 36; these are presumed to have been sculptured, as noted by Pliny. The evidence at the west end of the archaic temple was conclusive that the opening between the middle columns was 20 feet. It being so, this could be, and was, repeated at the eastern front. The Hellenistic builders were certainly more skilful and the marble could be easily quarried 25 feet in length, so there is no reason for supposing that there was a central ninth column in the eastern façade. A double row of twenty columns, counting those at the angle twice, were at the sides, six in the pronaos, or vestibule, and two in the posticum, or rear, making 108. No direct evidence was found with regard to the placing of the columns in the cella excepting a straight joint in the foundations, but by making the positions of the columns in direct alignment with those of the peristyle, 19 can be conveniently placed here, making a total of 127, that given by Pliny.

It will be seen by the model that the internal columns are made the same size as those of the exterior. This allows for a simple construction of roof. No purpose can be served by suggesting that they were smaller; if they were, they would have carried a gallery with passageways and cells, necessitating the complication of kitchen, water supply and drainage, which would be unnecessary and most inconvenient to reach and drain. The great roofs at either end are shown of identical size and shape, and the two uniting these are also identical to each other and fitting comfortably between the great roofs, all of simple construction. It would appear by the guttering that the intention was to have had a marble covering, but this was not carried out, as a multitude of fragments of terra-cotta tiles were scattered all over the site.

A word must be given with reference to the sculpture shown. That given to the pedestals and columns is as erected in the British Museum, but are shown at their true height, namely, level with the lowest drum of the unsculptured columns. The back plane of the pedestal represents the drum, and the sculpture stands forward and rests upon the upper surface of the great taurus member of the base; naturally the member is four square instead of circular. The lower base of the unsculptured columns is represented by a square sculpture facia, and all have the square lowest base resting upon the pavement. The sculpture shows great action and is in full relief, and rises even forward and above the carved cyma-recta capping. In contrast to this, and level with the second drum of the unsculptured columns, circular upper tiers of sculpture are carved in low relief and



A View showing the Great Altar

placed upon these square sculptured pedestals. These sculptures are extremely dignified and are in perfect harmony with the flutings of the columns, which start from a small taurus moulding above the heads of the sculptured figures. That to the Great Altar, which is based upon those discovered at Olympia, Pergamum, Priene and Selinus, follows the same lines. The western pediment, which is purely imaginary, depicts the Virgin goddess receiving gifts from Europe and Asia; the eastern indicates Leto nursing her twins, Apollo and Artemis, as a suggested subject.

The podiums to the steps follow those found at Didyma, and, placed upon these, are sculptures showing mounted Greeks combating with Amazons and Persians.

The design and shape of the Great Altar is conjecture based upon those found at Pergamum, Priene and Selinus.

It is strange how little is known regarding the rites and religion practised in and around this mighty temple, but there must have been many stirring times. Long processions of priests and priestesses, acolites, novices, lights and incense, slowly passing through the colonnades and courts, and on to the city and back; surging masses of citizens and country people; shouts and chants; statues borne aloft by their devotees, and, greatest among these, the precious cultus image, which fell from Jupiter, shrouded under a magnificent canopy, and guarded by a faithful bodyguard of sturdy priests and priestesses.

Those who have been to Seville, Cordova or Granada during Easter or Corpus Christi may faintly realise the stupendous happenings at Ephesus during a cultus festival. How are the mighty fallen! Now the site is the saddest wilderness in all Asia.

Reviews

THE PROFESSION OF ARCHITECTURE*

This book was well worth doing and has been very well done.

It consists of some five hundred and three pages, of which the first five hundred pages have been written for the sake of the last three, and that was well worth doing too.

More than half of the book is taken up with the result of a vast research into the origin and history of some thirty professions.

This will be found useful enough to those who want to know something about one or the others.

The authors have been at pains, at great pains, and have apparently consulted every possible means of information in order to set before their readers a correct statement of the facts concerning these numerous professions.

It is impossible for me to say to what extent they have been successful. As the authors themselves say, "No man is a citizen of more than one country," and if they have been hurried visitors to the homes of others, I, myself, have had no entry at all therein. I can only judge of the verisimilitude of their descriptions of other professions by what they have to say about my own, and on that, I can say that as far as my own knowledge goes, there appears to have been little overlooked in their effort to give a truthful description of that profession.

While this is true in respect of facts I cannot give the same certificate in respect of opinions; they have not been formed with the same care as was given to the ascertainment of facts. This is said despite the statement which the authors make that they have been at pains to protect themselves and their readers from inaccuracy, and to that end every section of this part of the book has been read through by at least one member of the profession concerned.

That that has been the course with regard to Architecture is evident upon the face of it.

It is perhaps a little unfortunate that the member of the profession to whom they resorted found himself able to father the opinion expressed on page 184 :—

"The architect is not only a professional man but also an artist, and shares in some measure both the problems and the qualities of temperament commonly associated with artists. Thus he lives in a world which is dominated by fashion and split up into cliques and coteries, and he brings to the consideration of professional business something of the outlook which characterises his interest in the subject-matter of his art. As a result faction has become the distinctive feature of architectural politics. The R.I.B.A. is a very active and energetic body, with much valuable work to its credit. But it is agitated and restless, and in architecture, alone among the professions, the public has become accustomed to the spectacle of the most eminent practitioners resigning from membership of the principal association. Moreover, in temperament the architect is touchy, liable to take offence where he conceives his dignity to have been affronted, and therefore anxious for the moral recognition on the part of the community which he has felt that registration implies, and for the more material recognition implied by a higher (relative) standard of remuneration."

That is a very unfair description of the profession. The eminent practitioners referred to might be counted on the fingers of less than one hand and that there have been such cases at all is no doubt due to the fact that it is possible to sever oneself from the principal association in a profession like architecture which is not entrenched behind legal sanctions with less risk to reputation and livelihood than is the case in professions such as Law and Medicine.

The authors say "it would be pleasant to acknowledge by name and in full all those who have helped us but most of them occupy administrative positions in their professional organisations, and many of them have intimated to us that they would prefer that their names should not be mentioned."

I should be surprised, indeed, if anybody occupying an administrative position in the professional organisation of architecture could be found to admit the parentage of this criticism and can well understand the anonymity under which it has been launched.

It will no doubt be gratifying to the Royal Institute of British Architects to find that to the authors of this book architectural organisation means the Institute, and though the criticism of the Institute which I have read is harsh and depicts that body as being largely futile in its action, the feelings with which such criticisms are read may be somewhat mitigated by the fact that the authors, with some inconsistency, in other parts of the work credit the Institute with having solved successfully more than one great problem of professional organisation.

These I will return to in the course of this review.

How little, generally, the authors of the work can be personally responsible for the section on the architectural profession can be estimated by contrasting the general impartiality of their attitude towards other professions with the partisan bias they exhibit on the question of registration within the profession of architecture, a bias they can only have derived from the unfortunate selection of their mentor.

* *The Professions*. By A. M. Carr-Saunders and P. A. Wilson. London. Oxford. 1933. 25s.

The work repeats *ad nauseam* those objections to registration with which all of us who have had anything to do with the business are familiar and which have exercised so little influence over the great body of members of the Royal Institute.

It is difficult to understand the extraordinary attitude which the authors display to the profession of architecture when they attempt to place it in its relation to other professions.

On page 306 the authors are considering the profession from the point of view of the intervention of the State, its necessity and desirability and in their consideration find that the professions which are regulated fall into five groups. First, those which are vital. Secondly, those where the service is fiduciary in a marked degree. Thirdly, those that have an intimate relation to public safety. Fourthly, those where the State has become an employer and employs professional as well as other workers, and, amazing to relate, they do not find that architects fall into any one of these four groups. Apparently there is nothing that is vital about the service of an architect, nothing that is fiduciary, nothing that has any relation to public safety and no occasion on which it is under the employ of the State. It is outside these four groups that the authors find the architect. Finally, they say there are the architects and the registered teachers.

Nothing fiduciary in a marked degree!!! And that after pointing out on page 177 the desirability of severing the architect from building interest and after quoting on that same page Soane's own definition of an architect, which runs as follows:—

"The business of the architect is to make the designs and estimates, to direct the works, and to measure and value the different parts; he is the intermediary agent between the employer, whose honour and interests he is to study, and the mechanic whose rights he is to defend. His situation implies great trust; he is responsible for the mistakes, negligencies and ignorances of those he employs, and, above all, he is to take care that the workmen's bills do not exceed his own estimate. If these are the duties of an architect, with what propriety can his situation and that of the builder or contractor be united?"

That should be fiduciary enough to satisfy even our exacting authors.

Then nothing vital about the services an architect renders, and this in face of the fact that Health and Housing have been inseparably connected since first attention was given and consideration paid to the interests of public health. Public safety. What of Bye-laws? What of dangerous structures? What of the necessity of deciding in these days of complicated construction the due proportioning of the several parts of a building?

It is little wonder that with these Rip van Winklish views of architecture as a profession the authors have gone astray in their appraisement of it.

However, let that pass.

Apart from the mode in which any particular profession has been dealt with there is much of interest and value in the book.

At the outset they disclaim any intention of defining a profession. It is no part of our purpose, they say, to attempt to draw a line between professions and other vocations. They are not prepared to say what vocations are professions and what are not. They believe, and believe rightly, that the work that they have done will in itself throw up in its true light and place the position of the profession in society.

They cannot, however, resist a foot-note which is to be found on page 287,

"If we had to define a profession we should find it difficult to improve the definition given by the O.E.D.: a vocation in which a professed knowledge of some department of learning or science is used in its application to the affairs of others or in the practice of an art founded upon it."

That, at least, seems to be good enough to be going on with.

There is an interesting note to be found on page 290, that the earliest phases of certain vocations, which have grown into professions, were passed within the Church.

"Nearly all the civil servants of the Crown, the diplomatists, the secretaries or advisers of great nobles, the physicians, the architects, at one time the secular lawyers, all through the Middle Ages the then large tribe of ecclesiastical lawyers, were ecclesiastics."

It is interesting, too, to be told, as we are on page 293, that with one exception, such specialised vocations of a professional nature as came into being after the Reformation and before the industrial revolution were filled by lawyers. The exception is architecture.

They go on to say that:—

"During the seventeenth century a very significant change took place in architectural design. All through the medieval period design seems, so far as our knowledge enables us to form an opinion, to have been impersonal, the result of a number of men working together, each concerned with the portion affecting his particular trade.

"In the seventeenth century traditional design was abandoned and foreign styles were copied. The conceptions imported from abroad included the designing of a building as a whole in such a fashion that any departure from the plan would mean ruin. Thus came the need for architects, and the men who arose to supply the need were those who had made a special study of foreign models, often while travelling abroad."

This note on page 294 might have been taken from the "Book of Snobs":—

"Early in the eighteenth century, and throughout it the professions were regarded first and foremost as gentlemen's occupations."

Heaven permit that they may still be so regarded.

In their chapter on The Rise and Aims of Professional Associations the authors show the growth of ethical codes and protective activity, and a growing concern in public affairs in so far as they are related to the work of the professions.

The general aim of the Professions to secure confidence in their members and develop teaching organisations within the profession is fully dealt with and at this point it is well to note their favourable comment upon the Royal Institute of British Architects' activities in forming an Educational Board.

It is suggested on page 393 to other professions that:—

"It might be found advisable to attempt to induce the chartered bodies to form educational boards on the lines of the Board of Architectural Education, which has been set up by the R.I.B.A., and has functioned with success. Such a board would include representatives of the universities and of other teaching institutions. Its existence need not involve the abrogation of ultimate responsibility by the professional association. Indeed, the success of the Board has enhanced the prestige of the R.I.B.A."

Not a bad effort for a restless and agitated body.

It would appear that in other respects the Royal Institute is unique. On page 324 it is given the credit of having organised its relationship with provincial societies, so that while they remain distinct from the London Institute they are fully recognised by it as representing the profession in their respective areas, and are organically connected with it by representation upon the Institute council and otherwise. Some statesmanship here, it might have been thought.

On page 325 architecture is also credited as being one of the two professions which have almost entirely got rid of conflict within itself.

However, probably the most interesting and important part of the book is to be found at the end, in the part dealing with Professionalism and the Society of the Future.

Herein is set out a vision of the part the profession may play in that society.

" The professional man," it is said, " is in touch with pure science, and its latest developments, using that word in the broad sense given to it by Professor Alexander, and he carries out his work in the world of affairs. He is, or might be, a mediator between the world of pure study and the world of everyday life.

" More than that, since the same language is not spoken in both, he is an interpreter. There is often a certain futility about the pure student called upon to give practical advice; he knows what is theoretically possible, but he does not know what is practically possible. The professional man knows what is acceptable to the world as it is, and therefore how much out of the theoretical possibilities can be put into effect, and in what manner.

"In other words one function of the profession is to bring Knowledge to the service of Power.

"Unless the modern world works out a satisfactory relationship between expert knowledge and popular control the days of democracy are numbered."

I should like, if I had space, to quote from the remaining pages of this work. They are there for the reader and they are well worth reading. The keynote is this:—

"The building of bridges between Knowledge and Power is the first necessity. Could that be achieved, the latent creative energy of the professions would be liberated."

The work concludes with the admonition that professions do not exist for the organisations that represent them, but that those organisations exist for the profession, and should be regarded as instruments to be created and remodelled where necessary by those, who by their means, render specialised services. "So long," they say, "as men are unable effectively to shape the institutions through which they serve, they will feel helpless; and if they feel helpless in regard to matters affecting their own vocation and its daily exercise, they will feel still more helpless in regard to matters beyond their immediate ken.

"Never before," they go on to say, "in the history of the world have men been so aware of social and economic problems; but with an obsession that is obstinate they will not look to their roots. They seek to replace existing organisation by other organisations, unmindful of the fact that organisation, in the sense in which the term is employed here, is a secondary consideration. Re-organisation will achieve nothing unless it springs from the desire of free men to play their proper part in the world of affairs.

"If this is understood there will be a shifting of emphasis, the sense of dependence and oppression now felt will be lifted, and a measure of freedom, dignity and responsibility given to all men."

That the professions should be able to bring this about is enough to justify their existence, if any justification is necessary, and to make this work one of value.

THE INTERNATIONAL COMMISSION ON ILLUMINATION 1931

Recueil des Travaux et Compte Rendu des Séances

Those interested in the work of the International Commission on Illumination will find Compte Rendu des Séances, 1931, devoted to Secretariat reports on the various aspects of illumination, both natural and artificial. While for the most part it is taken up on reports of a more technical nature such as the subject of photometry and distribution of luminous flux, subjects such as airport and airways lighting, street lighting, and daylight lighting should be of interest to architects.

The American report on airways and airport lighting indicates the enormous developments which have taken place in recent years. Airway beacons in 1931 covered a total mileage of 14,500, while the total miles of established air routes was 32,000. Standard beacons have been established, marking the various routes which cover a wide area of the country, incorporating characteristic colours and flashes on a similar principle to that of lighthouses and buoys. There is also the British report on the similar subject.

Daylight illumination was chiefly dealt with in the British Committee, and it endeavours to establish certain agreements regarding the minimum daylight requirements in buildings. A proposal was put forward by the British National Committee, in co-operation with the Science Standing Committee of the Royal Institute of British Architects, suggesting a criterion of reasonable fenestration to represent modern practice, ensuring at the same time adequate daylight illumination. These proposals were accepted by the R.I.B.A., and put forward at the Cambridge meetings.

Since a great deal depends on establishing some record of lighting practice in various countries of the world a questionnaire was circulated to various countries on the following subjects:—

Part 1. Electrical advertising.
Part 2. Electrical store lighting.
Part 3. Electrical floodlighting.
Part 4. The office and drafting room practice.

These reports form a very interesting comparison and are extremely useful for the interchange of ideas between the countries.

The usefulness of the reports is naturally limited from the point of view of reference, but its interest lies in the fact that it indicates the considerable work and research which is being carried out on the problem of natural and artificial lighting which plays such an important part in our everyday life.

The question of lighting as related to architecture has been considered by the Illumination Commission and a resolution was passed to the effect that it was essential for a national committee to be formed composed of architects and engineers. Its work would be devoted in studying the problem of light in its relation to architecture. This committee has already been formed in this country and the work is already in progress.

Waldo Maitland [A.].

JENNINGS'S LAW RELATING TO TOWN AND COUNTRY PLANNING

A third part, containing the Regulations and Orders, has been added to Ivor W. Jennings's Law Relating to Town and Country Planning. It is published by Messrs. Charles Knight and costs 7s. 6d. net, plus 6d. for postage.

The addition of the Regulations and Orders makes Mr. Jennings's text-book on the Act complete, Parts I and II having contained a general explanation of the law and a fully annotated edition of the Act itself. The Regulations and Orders deal with the application of the Act to schemes in course of preparation, the details of planning procedure and provisions for interim development.

BUILDING SOCIETIES

THE BUILDING SOCIETIES YEAR BOOK, 1933. *Edited by George E. Franey. London: 1933. Reed & Co. 7s. 6d.*

The Building Societies Year Book for 1933 has been received by the Library. In addition to information about all the Societies in England, the Year Book contains the verbatim reports of the papers read at the recent International Conference in London, including that by Sir Raymond Unwin on the Value of Good Design in Dwellings, with the whole of the discussion which was opened by Mr. Sydney A. Smith, F.S.I., who was followed by Lady Emmott and several other speakers, including Mr. S. C. Ramsey [*F.*], Mr. Langley Taylor [*L.*] and Mr. E. G. Allen [*F.*].

QUICKER SEASONING OF WOOD: THE ADVANTAGES OF KILN-DRYING

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. FOREST PRODUCTS RESEARCH SPECIAL REPORT No. 3. "PRACTICAL KILN-DRYING." *London: 1933. H.M. Stationery Office. 1s. 6d.*

The practical aspects of the drying of timber in kilns, with its advantages of quicker seasoning and better control of drying conditions, as compared with the centuries-old method of seasoning for long periods in the open, are dealt with in a special report issued recently by the Department of Scientific and Industrial Research.

"The term 'seasoning,' as distinct from 'drying'," the report states, "is in some respects an unfortunate one, as it implies that the green wood is in some way mellowed, and the quality generally improved, by exposure to the seasonal changes in the atmosphere. There is, however, no definite evidence to support the belief that the timber is improved even by long exposure to the elements, and experiments carried out at the Forest Products Research Laboratory tend to show that there is little difference in the general behaviour of timber which has been dried for a number of years in the open or in a few weeks or months by proper artificial means, provided that the extent of the drying has been the same in both instances."

The report points out that, as an offset to its simplicity, the air-seasoning of timber in the open has several disadvantages, the chief being the length of time elapsing before sawn timber is ready for use. Other disadvantages are that large stocks of timber must necessarily be kept by timber users, and this means that much of their capital is rendered unproductive, and also that considerable ground space must be acquired and set aside for the storage of this timber. The wood so stored is liable to be attacked by many forms of insects and fungi, and much damage and loss may be caused as a result. Moreover, however long the wood is seasoned by exposure to the normal outside air conditions, it will never be dried sufficiently for certain classes of indoor use without some subsequent form of artificial drying.

Much of the trouble experienced during the drying of timber is caused by forces set up by the premature shrinkage of the surface, and the whole success of drying lies, therefore, in preventing these forces becoming excessive. If they do, checks and splits on the surface will result, and even when less severe they may cause "case-hardening"—a serious defect when timber has to be resawn or machined. If, on the other hand, by too rapid drying the exterior of the timber has set without having undergone much shrinkage, then, when the interior dries and seeks to shrink, it may pull away from the exterior and cause internal checks known as "honeycombing."

To keep the drying stresses within reasonable limits it is necessary to control the drying conditions so that the rate at which moisture is evaporated from the surface of the wood is approximately equal to the rate at which it transfuses from the centre outwards. In kiln-drying, both transfusion and evaporation largely depend upon the proper regulation and control of the air conditions in the kiln throughout all stages of drying. The factors which are to be controlled are thus the amount of moisture in the air of the kiln, *i.e.*, its humidity, the temperature of the air and the rate of air circulation. The report gives practical advice concerning the measurement and regulation of each of these factors.

"For the satisfactory and rapid drying of wood, it is found," the report states, "that a most suitable form of treatment is one in which the temperature of the air is gradually increased and its humidity lowered as the drying of the timber proceeds. The initial temperature and humidity employed depend mainly on the species, though the dimensions of the timber, its general quality and the results required may have some influence."

The optimum drying conditions for timber in any given state can best be determined by test, and in practice a suitable drying schedule is obtained from the results of previous tests carried out on the same or similar material. The report contains an appendix giving some of the schedules which have been found by experiment at the Forest Products Research Laboratory to be most suitable for the drying of Empire timbers.

DRY ROT IN WOOD: ITS CAUSE, REMEDY AND PREVENTION

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH. FOREST PRODUCTS RESEARCH BULLETIN No. 1. "DRY ROT IN WOOD," SECOND EDITION. *Published by H.M. Stationery Office. 1s.*

The first edition of the Forest Products Research Bulletin on Dry Rot having become exhausted, the opportunity has been taken to revise it thoroughly and to incorporate additional matter which has become available as the result of further experience and experiment.

The first part of the Bulletin, which deals with *Fungi Causing Dry Rot in Wood*, was originally written by the late Professor Groom, F.R.S.; this has now been rewritten by the mycologists of the station. Part II, which is on *The Detection and Practical Treatment of Dry Rot*, has been contributed by H.M. Office of Works; and Part III, on *Precautions . . . to Prevent Outbreaks of Dry Rot*, has been contributed by the Building Research Station.

The fungi which attack wood cannot obtain their food supplies from the wood if its moisture content is much below 20–25 per cent. of the oven-dried weight of the wood. "Wood," the report states, "that has been thoroughly air-seasoned in the open contains 15-18 per cent. of moisture, and in a properly ventilated house this soon falls to 12-14 per cent. or even lower where central heating is installed."

Merulius Lacrymans, the euphonious name conferred by science on the fungus which causes most of the trouble in this country, appears to be what gardeners would call a "rampant grower." It can, for example, not only live on wood, but can feed for a time on such materials as paper, straw, or even on a soil rich in vegetable mould. The strands or strings which are an important characteristic of the fungus vary from mere threads up to stout, hard strands as thick as a lead pencil. Carrying supplies of food with them, they can spread over surfaces on which the fungus is not feeding, and under favourable conditions can

travel many feet in a few months. In bad cases they may reach every piece of timber in a house. They can penetrate mortar and partition walls and have been found in the middle of soft bricks, and are reported even to have penetrated a stone wall 2 feet thick. Cases have been known where the fungus has travelled from the ground floor behind layers of plaster and attacked the timbers on the first floor. In one case the fungus is stated to have travelled along a joint of rolled steel for a distance of more than 10 feet.

After growing some time in wood the fungus produces fruit bodies rather like pancakes, with a mushroomy smell when fresh. These vary in size from a few inches to over a foot in diameter. Many millions of spores may be shed from a single fruit body. These spores blow about with the slightest draught and may be carried by insects and vermin. Every one of these spores is capable of giving rise to a complete new fungus plant.

Coal in the coal cellar may be a source of dry-rot infection, since the timber used in many coal pits is covered with fungi, the spores from which may be deposited in the coal. Tools used for working with dry-rot infected timber may also themselves become infected and spread the trouble if not properly sterilised.

In the third section, dealing with the precautions to be taken in new buildings to prevent outbreaks, emphasis is laid on the importance of the timber being healthy and well seasoned, and free, as far as possible, from sapwood or shrinkage cracks in which spores might lodge. In the construction of the building it is essential that adequate measures should be taken to prevent damp penetration through walls after the erection of the building, by the provision of proper damp courses and the prevention as far as possible of condensation of moisture on internal walls, and the proper ventilation of spaces below floors.

"A great deal of trouble has been experienced," the report states, "with wood floors laid directly on concrete, especially with ground floors. The provision of a really impermeable layer below the timber is absolutely essential. A lightly brushed coating of tar, which is often used, is quite valueless and a continuous thick layer of bitumen should be regarded as essential."

The report points out the danger of using linoleum over wood flooring when this is laid directly on concrete, and remarks that in many new housing estates the use of such floor coverings is banned for twelve months until the houses have had time to dry out. "At any time," the report continues, "the use of a covering over *the whole* floor area, which prevents the access of air and requires washing, with the attendant risk of moisture between the covering and the floor, is dangerous."

The report is illustrated by many striking photographs and contains full details for identifying the various wood-destroying fungi and for distinguishing them from harmless fungi and mould growths.

"HOME" ARCHITECTURE

HOME ARCHITECTURE. *By Newcomb and Foster. 1933. New York: Wiley and Sons, Inc. London: Chapman and Hall. 20s.*

It was news to us that in some American Universities students can take courses in "Home Architecture," meaning a study of domestic building from the sociological rather than from the purely architectural point of view. The authors of this book have for a period of seven years taught the subject in the University of Illinois, and it is intended as a "textbook for courses in home architecture and as a ready manual for the home builder and home owner."

The subject is covered with an astonishing catholicity, ranging from a typical Frank Lloyd Wright drawing of a typical Frank Lloyd Wright house, labelled "House in the Prairie Style (Courtesy of the *Western Architect*)" to detailed descriptions of the highly developed equipment of modern American houses. The illustrations are badly selected and many of the captions, just as the one quoted above, are deplorable. The text shows no real grasp of the fundamentals of domestic planning and design. Yet the book is by no means superficial, however repellent it may be to the real student of domestic architecture. Certain sections are worth reading, notably those dealing with equipment, some of which will be entirely new to the English architect: "Ownership versus Tenancy," "Why Employ an Architect" and "Financing the Home," while "Landscaping" is much more useful than it sounds.

This book undoubtedly supplies the reason for what might be called "Hollywood Domestic" of the kind which houses a large proportion of the citizens of the United States. The serious student may take it in his stride.

MATHEMATICS FOR STUDENTS OF BUILDING. *Book I. By F. E. Drury and W. T. Haslam. Lond.: Arnold, 1932. 4s. 6d.*

This book, as its title suggests, is designed for "building students" rather than "architectural students," but inasmuch as every architectural student should also be a student of building, the book should prove of value to them too. The authors, Mr. F. E. Drury, who is principal of the L.C.C. School of Building, and Mr. W. T. Haslam, a lecturer at the school, have planned three volumes, of which this is the first, to cover all the mathematics necessary for their three-years' senior course. The present volume naturally deals only with quite elementary things, which students at an architectural school are presumed to know before they start their specialised training. The value for architectural students lies, however, in the wonderful store of architectural information concealed in the "examples." The practical acquaintance with facts of real importance that the student is given in this incidental way is likely to remain, so that he will start his career by knowing as a matter of course many of the little oddments of architectural data that are in continual demand in daily practice. As a mathematical textbook it seems admirable, and follows a clear and logical progression, so that the student need never be left in the dark.

LETTERING

PEN PRACTICE. *By Walter Higgins. Pam.: Lond.: Batsford. 1932. 1s. 6d.*

Very few people write well—and, alas! very few people seem even to try to form their script with any proper regard for its appearance. Mr. Higgins in this small book sets out to correct this universal failing by a simple enunciation, precept and practice going hand-in-hand, of the principles of good lettering. It is a book that should prove useful, and, being cheap in price, should find wide acceptance. It is, however, rather unfortunate that the examples of lettering illustrated, apart from the precedents given in the last few pages, are often rather crude in form without either the refinements or "liviliness" of really good letters. Facility in practice is a necessary first step and the keen student, with the background provided by Mr. Higgins, will be able later to develop the refinements of his art.

The Leverhulme Building of the Liverpool School of Architecture

THE OPENING CEREMONY ON FRIDAY, 21 JULY

On Friday, July 21, the new Leverhulme building of the Liverpool School of Architecture was opened by Lady Leverhulme. The Vice-Chancellor of the University, Dr. H. J. W. Hetherington, was in the chair, and he was supported by Lord Crawford and Balcarres, the Chancellor of Manchester University, the Lord Mayor of Liverpool, and Sir Giles Gilbert Scott. Lord Derby, the Chancellor of Liverpool University, was unfortunately unable to be present, having been detained by his duties on the India Commission, Professor Lionel Budden and Professor C. H. Reilly, who made, as he said, his "positively last appearance." For him there must have been cause for particular satisfaction that he should thus see at his departure the many years of his work culminate in the opening of a new building for which, in more ways than as part architect, he is personally responsible.

The Vice-Chancellor, in opening the proceedings, referred to the munificent gift from the late Lord Leverhulme, which had made the building possible. The new school was, he said, the realisation of an old dream of Lord Leverhulme, who before the war first thought of housing in a building of suitable convenience and dignity the School of Architecture, in which he had so lively and generous an interest. Many causes, not least the war, had postponed the realisation of that dream, and it would not have come about even now had it not been for the additional generosity of the present Lord Leverhulme.

Lady Leverhulme, who had been presented with a small bronze figure of a mermaid, the work of a Liverpool sculptor, as a memento of the occasion, then opened the building and spoke briefly of the interests of the late Lord Leverhulme in architecture and town planning and expressed the pleasure she and the present Lord Leverhulme felt at being able to help in carrying out his wishes.

Lord Crawford, in a delightful speech, paid a well-deserved tribute to Professor Reilly, who was, he said, one who had had "a fundamental and continuing good influence upon English schools of architecture."

The alliance between architecture and the humanities so well realised in the school, continued Lord Crawford, was one of the cardinal elements of its success. They were fortunate at that University in its magnificent physical equipment. "The degree of study nowadays required both in the sciences and in the arts becomes more extended and more intense. In different branches of learning the initial stages of study are ever so much more serious than in old days they used to be."

In architecture, continued Lord Crawford, a mistake was an enduring mistake; "it lasts until your client can afford to pull it down." A vulgar building would always be a vulgar building, but not so a vulgar portrait. A vulgarian was really only a vulgarian to those who knew him. Titian and Velazquez knew lots of vulgarians, profiteers and snobs, and painted them, but their vulgarism had disappeared as their personalities vanished. The portraits remained today, and we admired them. The architect, however, had to be more fastidious, and because he was more vulnerable the importance of his school was enhanced.

"Let me remind the young architects here that in this world of ours there is an inherent prejudice against the arts. I do not say ineradicable, but it is there, and it is very deep-seated indeed, especially if the artist is what one might call 'arty.'" The strength of the Liverpool School of Architecture, he added, had lain in its simple, direct and honest treatment of architecture which they owed to the wisdom and good offices of Professor Reilly.

Professor Reilly, who then spoke, referred to the time when he used to discuss the project for the school with the late Lord Leverhulme. "I put forward a great number of ideas," said Professor Reilly, "including one for rebuilding the whole university, but the one I never put forward, and which was his own idea, was a new home for the School of Architecture; and, therefore, from the bottom of my heart I thank him for giving us this great school, and I thank his son for making it possible in these days of higher prices."

He was convinced that under Professor Budden and his colleagues the school would go on from strength to strength.

That school, continued Professor Reilly, had had good fortune, perhaps because he had learned a little of what they called publicity. He believed in speaking to a larger world when one represented a fine art like architecture, and it had had, as everyone had so kindly stated that day, a certain influence in the world at large. It had led fashions. He did not think that was entirely good. In the changing conditions of architecture which new materials were bringing in, in the simplification of life which was coming in every country in Europe, he felt that architecture, as in the Gothic days, would be inter-

national, and would move on great waves founded on consideration of simplicity of ideas. In such a movement, affecting every country, he felt schools would have more effect than even individuals in the past, and, therefore, if that school was true to its traditions he felt it would have a far greater influence than it had had in the past.

Lord Leverhulme expressed the gratification he felt in the fulfilment of his father's promise to the University, and congratulated the architects on the design of the new school building. "I am old-fashioned enough to believe," he said, "that the unit of civilisation is not the individual but the family, and if that is so the unit of architecture is the house." It might fall to the lot of a few great men to design cathedrals and to a few to build churches and town halls, but the great majority of architects were mainly concerned in designing houses. If only the builders of houses, whether of single houses or of lines of houses, would realise the great responsibility which was theirs in adding a permanent feature to the landscape, they would understand the importance of employing a fully qualified architect.

Correspondence

THE REGISTRATION COUNCIL OF THE UNITED KINGDOM AND THE PROPOSED INSTITUTE OF REGISTERED ARCHITECTS

Architects' Registration Council of the United Kingdom,
18 Abingdon Street, Westminster, S.W.1.
28 July 1933.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—A proposal to set up a new professional organisation of those persons engaged in the practice of architecture, under the title of an Institute of Registered Architects, has been brought to the notice of the Architects' Registration Council of the United Kingdom through a communication addressed to me, as chairman of that body, by the promoters of the scheme. I understand that in communications to the Press the proposal has been referred to as a "sequel" to the Architects' Registration Act. If the term "sequel" is to be understood as meaning that which necessarily follows, then I am of the opinion that it is misleading in this connection. I know of nothing in the situation which requires the setting up of a new body to protect the interests of registered architects. In so far as such persons are members of existing professional architectural organisations—and they form a vast majority of those on the Register—they are amply protected by the presence of direct representatives of those associations on the Architects' Registration Council.

In so far as they are not members of existing professional organisations—and these form a relatively small minority of those on the Register—they are very ably represented at the present time, and in the same proportion as those registered architects who are members of existing professional organisations, by a gentleman appointed in the first place by the Secretary of State for Home Affairs as provided by the Act.

I do not know, and nothing in the communication which has been addressed to me enlightens me, as to what measures for the protection of registered architects are not either being or likely to be promoted by the Architects' Registration Council.

In the interests of the Council itself and of all the bodies represented upon it, I would ask any persons contemplating joining the proposed new Institute to suspend their decision until the views of the Council on the subject-matter of the communication which has been addressed to them are known. This will follow immediately upon the next meeting of the Council on 25 September.

I am, Sir,
Your obedient Servant,
HARRY BARNES,
Chairman of the Architects'
Registration Council of the United Kingdom.

Crabtrees, The Common,
Berkhamsted, Herts,
24 July 1933.

To the Editor, JOURNAL, R.I.B.A.,—

SIR,—I am glad to see the note in the JOURNAL of 22 July of the O.B.E. which has been given to my old friend, H. C. Mason [*F.*]. the Government Architect in Iraq—never was an honour more well deserved.

Mason was in my office in 1914, and joined up in August, volunteering for active service. After his training, as a private, he went to India, and then later arrived in Mesopotamia at the height of the muddle and confusion. Mason's opportunity came when one day the authorities asked if by any chance there was anybody who could plot a survey made from an aeroplane, and again, if there was anyone who knew anything about building. When H. C. M. stepped into the breach he very soon found himself compelled to take a commission in the Royal Engineers. The work he did was so well done that at the end of the war he was a Major, and it was work which called for the greatest skill in improvisation.

After the war, what could have been fitter than that Mason should carry on as he has, and it is in this post-war work which will I think, entitle him to higher honours, if he desires them. Very few people realise the work which has been done in Iraq in the last few years, in orderly planning of the towns, in sanitation and the building of hospitals, in markets, and so on and so forth, or the difficulties of doing it: if, for instance, all your materials have to be carried on the backs of camels it does introduce complications.

In all this Mason has played a leading part and left his mark in Iraq. I like to think of an F.R.I.B.A. doing us all credit in this way.

Yours faithfully,
C. H. B. QUENNELL [*F.*].

Notes

VICE-PRESIDENT'S ENGAGEMENTS

Mr. H. S. Goodhart-Rendel, Vice-President, represented the President at a garden party at Morden College on 26 July.

AERODROMES ADVISORY BOARD

R.I.B.A. Appointments

Sir Giles Gilbert Scott, R.A., and Mr. Maurice E. Webb, D.S.O., M.C. [*F.*], have been appointed as the representatives of the Royal Institute of British Architects on the new Aerodromes Advisory Board.

MR. NORMAN KEEP [*F.*]

Mr. Norman Keep [*F.*] has been appointed Head of the Senior Day School and the Evening Building Department at the School of Building, Brixton, S.W.

R.I.B.A. MAINTENANCE SCHOLARSHIPS IN ARCHITECTURE

The Royal Institute of British Architects announce that the following Scholarships, each of £100 a year, have been renewed for a further period of one year:—

Mr. E. F. Ward (Architectural Association School of Architecture, London).

Mr. A. M. Irvine (School of Architecture, Robert Gordon's Colleges, Aberdeen, 4th and 5th Year Maintenance Scholarship).

Mr. M. G. Gilling (Liverpool School of Architecture, University of Liverpool) has been recommended to the Artists' General Benevolent Institution for the renewal of his Scholarship of £100 for another year.

A special extension for one year of the Scholarship of £100 awarded in 1930 has been granted to Mr. Ralph Dickinson (Birmingham School of Architecture).

The Ralph Knott Memorial Maintenance Scholarship of £45, tenable at the Architectural Association School of Architecture, has been awarded to Mr. C. O. Tremeer.

AN EXHIBITION OF COTSWOLD ART

An exhibition of Cotswold Art and Craftsmanship is to be held at Chipping Campden from 3 August to 2 September in the buildings of the Alcuin Press. The exhibition will only contain the very best work and will include examples of furniture and joinery, textiles, pottery, wrought iron, silversmithing, printing and bookbinding, needlework and embroidery, jewellery, oil paintings, water-colours, drawings, miniatures, etchings, woodcuts, plaster friezes, sculpture, stained glass, heraldry and calligraphy. The president of the exhibition is Mr. F. L. Griggs, R.A., R.E. [*Hon. A.*].

THE BUILDING CENTRE COTTAGES

The Building Centre has published an excellent booklet containing illustrations of sixty of the designs sent in for its recent competition for three-bedroomed cottages, which can be obtained from the Building Centre for 5s. (5s. 6d. post free).

TOWN PLANNING INSTITUTE

Meeting at Cardiff

The fifteenth annual country meeting of the Town Planning Institute will be held at Cardiff, from 6 to 8 October 1933, inclusive, under the chairmanship of the President of the Institute, Mr. T. Alwyn Lloyd [*F.*]. The meeting will open on Friday afternoon, 6 October, which will enable members to take advantage of the cheap week-end tickets issued by the railway companies.

The Lord Mayor of Cardiff (Alderman C. F. Sanders, J.P.) will extend an official welcome to the delegates; papers on Town Planning matters will be presented, and visits will be made to places of interest in Cardiff and district.

A detailed programme will be issued in due course.

The meeting is not confined to men or members of the T.P.I. only. Inquiries should be addressed to the Secretary, Mr. Alfred R. Potter, 11, Arundel Street, Strand, W.C.2.

NOTES FROM THE MINUTES OF COUNCIL

3 July 1933

The School of Architecture, Birmingham

On the recommendation of the Board of Architectural Education it was resolved that the recognition of the three years' full-time Certificate Course for exemption from the R.I.B.A. Intermediate Examination, and the five years' full-time Diploma Course for exemption from the R.I.B.A. Final Examination, be continued.

Prizes

The Board reported that they had approved the work prepared on his tour by Mr. G. A. Jellicoe, Neale Bursar, 1932.

The Board reported that they had approved the tours proposed by the following Prize Winners:—

(*a*) Mr. C. J. Searle, Tite Prizeman, 1932.
(*b*) Mr. Basil Spence, Pugin Student, 1933.
(*c*) Mr. H. F. Hoar, Owen Jones Student, 1933.
(*d*) Mr. F. G. Costello, Hunt Bursar, 1933.
(*e*) Mr. Howard Robertson, Godwin and Wimperis Bursar, 1933.
(*f*) Mr. A. G. S. Fidler, Victory Scholar, 1933.

The R.I.B.A. (Anderson and Webb) Scholarship at the Cambridge University School of Architecture

The Board reported that as a matter of urgency they had approved certain revised conditions for the R.I.B.A. (Anderson and Webb) Scholarship at the Cambridge University School of Architecture.

The R.I.B.A. (Archibald Dawnay) Scholarships

On the recommendation of the Board it was resolved that in future candidates for the R.I.B.A. (Archibald Dawnay) Scholarships be required to submit, in addition to portfolios of their second and third year work, a portfolio of the work of their first year course.

The Recognition of Australian Schools of Architecture for Exemption from the R.I.B.A. Examinations

The Board reported that under the terms of the scheme agreed between the Royal Institute of Architects and the Royal Australian Institute of Architects whereby the Royal Australian Institute of Architects act as the authority for architectural education and examinations in Australia, the School of Architecture of the Sydney Technical College had been recognised for exemption from the R.I.B.A. Final Examination.

British Architects' Conference, Cambridge

A hearty vote of thanks was passed in favour of the President and Council of the Essex, Cambridge and Hertfordshire Society of

Architects, the Cambridge Chapter, and of all those who offered hospitality and contributed to the success of the recent Conference at Cambridge.

THE R.I.B.A. NEW BUILDING

The New Building Committee reported upon the tenders received for the main contract, the lowest of which was £106,377, from Messrs. Ashby and Horner. The Committee also reported that Messrs. Ashby and Horner's tender had been adjusted and accepted at the figure of £106,250.

GIFT TO THE R.I.B.A. LIBRARY

A cordial vote of thanks was passed in favour of Mr. H. L. Anderson [*L.*] for his generous gift to the R.I.B.A. Collection of an interleaved copy of R. W. Billings's *Antiquities of Durham* and two volumes of sketches of the work of William Burn.

THE COURT OF GOVERNORS OF SHEFFIELD UNIVERSITY

Mr. E. M. Gibbs, M.A.(Hon.), J.P. [*F.*], was appointed to represent the R.I.B.A. on the Court of Governors of Sheffield University for the three years ending 30 June 1936.

THE R.I.B.A. ARCHITECTURE MEDALS

The Institute of Architects of New South Wales have decided to accept the Council's offer to present a medal for award in the area of the New South Wales Institute.

The Council have appointed Professor Leslie Wilkinson [*F.*] to represent the R.I.B.A. and act as Chairman of the Jury.

STANDARDISATION IN RESPECT OF CONCRETE AGGREGATES

The Council have appointed Mr. Alban H. Scott [*F.*] to represent the Institute at the British Standards Institution Conference called to consider the above, and on the Technical Committee which will be set up if the Conference is in favour of proceeding with the matter.

THE EAST AFRICA INSTITUTE OF ARCHITECTS AND REGISTRATION

The Council have made a grant of £10 10s. to the East Africa Institute of Architects towards the cost of promoting a Bill for the registration of architects in Kenya.

THE BUILDING INDUSTRIES NATIONAL COUNCIL

The Council have agreed to date the annual grant of £100 to the Building Industries National Council as from 1 October 1932.

MEMBERSHIP

The following members were elected:—

As Hon. Corresponding Member ..	1
As Fellows	12
As Associates	7
As Licentiates	10

REINSTATEMENT

The following ex-members were reinstated:—

As Associates: Arthur Todd Phillips.
James Austen Woodgate.

RESIGNATIONS

The following resignations were accepted with regret:—

Philip Edward Barker [*F.*].
Arthur Harry Gale [*A.*].
Mrs. Doris Adeney Robertson [*A.*].
Alexander Steele [*A.*].
Stuart Bedford [*L.*].
Bernard Cuddon Palmer [*L.*].

THE ARCHITECTS' GOLFING SOCIETY

A successful meeting of the above was held on Wednesday, 12 July, at the Berkshire Club. The President (Sir G. G. Scott) and eighteen other members attended.

A medal competition was held in the morning, results of which were as follows:—

F. J. Humphfry	..	95—16=79 (takes prize on best second nine).
J. S. Harrison	..	87— 8=79.
Sir G. G. Scott	..	87— 7=80.

In the afternoon a four-ball foursomes against bogey resulted in a win for F. J. Buckland and H. St. John Harrison with the remarkable score of 10 up, H. White and R. B. Selby being second with 8 up.

The Society is open to all whose names are in the *Kalendar*. Will anyone interested please communicate with R. B. Selby [*A.*], Hon. Sec., "Premier House," 48 Dover Street, W.1.

Will members kindly note change of address.

Obituary

WALTER EDWIN LEDGER

Walter Ledger was born in Lille in 1862, and was educated privately; later he was articled to the late W. H. Crossland [*F.*], the designer of the Holloway College at Egham, and a considerable portion of the design was due to Mr. Ledger's facile pen. He was admitted an Associate in 1882, but never practised professionally and retired many years before the end of his life.

Mr. Ledger was an extremely versatile man. He was the acknowledged authority on cerapegras, and was an honorary member of the Royal Horticultural Society's Scientific Committee. His garden at Wimbledon contained a wonderful collection of rare and unusual plants which he had had sent him from all parts of the world, and on his death his greenhouse plants were accepted by the Curator of Kew for the national collection. He was a more than usually accomplished pianist, with a preference for the works of Chopin.

Many years ago he started a collection of the works of Oscar Wilde and contemporary writers, and at his death this collection was unrivalled; it contained practically every edition in every language of everything Oscar Wilde had ever written, and these works, together with certain unpublished writings, were at his desire presented after his death to University College, Oxford, and are now in a special room at the Bodleian Library.

Apart from this collection, he had a very extensive library of first editions and old books, of which those relating to architecture now have a permanent home in the Institute's Library. His collection of prints was first offered in accordance with the terms of his will to the British Museum to take such prints as they wished; some of the remainder have come to the R.I.B.A. and others have gone to the Fitzwilliam Museum at Cambridge.

His greatest love, however, was for the sea, and his first yacht was the 3-ton *Shrimp*, a minute cutter in which he sailed usually single-handed and in which he once went by river and canal from the Thames to the Severn and back; in later years he bought the *Blue Bird*, a fine little 6-ton cutter, in which he cruised about the East and South Coast. Accounts by him of two of his cruises appeared in the Royal Cruising Club Journal. He never married, but, until her death a few years ago, lived with an elder sister. He was a gentle, kindly and essentially a lovable man who, never in all the writer's long friendship with him, ever heard him say an unkind or ungenerous thing about another. He had, of course, his eccentricities (which of us has not?), one of which will bring him back to the memory of many, and that was this, since his old Naval Volunteer days he had always, ashore and afloat, dressed as a Bluejacket, with the name of his yacht on the cap ribbon.

He passed away in December 1931, and was buried at Merton Parish Church beside his sister. D. C. L. C.

WILLIAM VALLANCE BETTS [*F.*]

Mr. W. V. Betts was born in the year 1862 and died on 10 July 1933. He received his architectural training at the Nottingham School of Art, and in 1893 started in practice in Old Basford and Nottingham, where he practised all his life. He was the architect to the Basford R.D.C. for many years, and also carried out many works for the Co-operative Societies in various part of the country, the amount spent on these buildings being over £400,000. He carried out small housing schemes for the Nottingham Corporation, and many factories, bakeries (one of which was opened by Princess Mary), warehouses, abattoirs, bleach works and domestic work of all kinds. He became a Fellow of the Institute in 1927.

Mr. Betts was a prominent Wesleyan and devoted at least one-tenth of his income to church and charity.

The practice is being carried on by Mr. Albert William Betts under the same name of W. V. Betts and Son.

Allied Societies

THE MANCHESTER SOCIETY

On Thursday evening, 13 July, a summer visit of the Manchester Society of Architects was paid to buildings designed by W. A. Johnson, Esq. [*F.*], architect to the Manchester Co-operative Wholesale Society.

A large warehouse building attached to a tobacco factory was visited, where many interesting forms of construction were seen. A visit was also paid to the extension of the Co-operative Union building, where a large assembly hall, lecture rooms, board room and offices have been built.

Some very interesting reconstruction of old work was seen at the head offices of the Society, where the private offices, restaurant, smoke room, library and ladies' room, etc., of the directors have been remodelled with a most successful effect.

Another visit was paid on Wednesday evening, 26 July, to the Mines Rescue Station at Boothstown, designed by Messrs. Bradshaw, Gass and Hope. This is a most interesting building, being constructed, as a consequence of recent legislation, to provide accommodation and apparatus for trained men to carry out rescue work at any mines in the Lancashire and Cheshire district, and is conveniently situated in the centre of the area.

Accommodation is provided for the training of other men and includes galleries in which will be reproduced conditions which may be present in a mine when a serious accident has occurred. There is accommodation for oxygen apparatus, motor tenders and an aviary for the canaries used to test the quality of the air in the mine.

Adjoining the station are houses for the superintendent, instructors and permanent staff.

SCHOOL NOTES

THE ARCHITECTURAL ASSOCIATION SCHOOL OF ARCHITECTURE

REVIEW OF THE ANNUAL EXHIBITION OF STUDENTS' WORK

BY A. S. G. BUTLER [*F.*]

The Exhibition of Students' Work at the Architectural Association, which was held during July, deserved very close inspection. It begins with the early exercises by the First Year students in the use of drawing instruments, the knowledge of scale, and incipient studies in simple architectural forms. Accompanying these measured works, isometric drawings and small perspective works are shown. These are combined with shadow projection, study of lettering and the arrangement of lettering in panels, the adaptation of historical forms and types of building to plan, to create sheets of drawings in which rendering and tone value finally emerge. It is interesting to note how difficult it is to teach a sense of scale, and emphasis is wisely laid on this all important matter by the staff. The First Year work continued with a small design from the "utility" point of view, in this case "A Coastguard's Duty Cabin." I thought it admirable to find linen tracings of the working drawings of this.

At this stage the study of colour and pattern theory is introduced in lectures, the students being given a plan which they decorate simply in colour and colour furniture. At the same time these First Year students are measuring details in museums, such as doorways, and there are constant six-hour sketches in which, of course, the plan and all the requirements are duly given.

The final design of the First Year is the "Entrance Lodge to a Nobleman's Residence, with a Bridge over a Ravine." Many of these are very commendable, though few achieve perfect unity between massive gates and the small dwelling. I noticed, also, an inclination to introduce the modern note—in glazing, mixed, for instance, with traditional Cotswold treatment. I thought the smaller work of the First Year more valuable and was very interested in the students' plunge into bathroom design and decoration—so fashionable a subject.

The succeeding years' work illustrated the excellence of the scheme of education at the schools; the students do analysis of ornament with large studies and drawings from museums, drawings of advanced structural form, and research into historical types of building which are related to the subjects of their designs. A remarkable piece of survey was made by some students and is exhibited here, namely, Lyvden New House, Northants. I was informed that, not only was the building completely measured and drawn out, but the drainage and water supply and all the rest was properly surveyed. Finally, the designs were submitted for the completion and reconstruction of the building based on old letters and Thorp's drawings. This is an excellent instance of relating a theoretical school of work to the sort of thing architects have to do in real life.

The choice of subjects for the bigger designs is one of the most tricky which the staff have to tackle; for instance, the "Memorial Chapel" in the Third Year escaped, in my opinion, a little out of control into the realms of the fantastic; but after seeing this I was very interested to note that real studies of the orders are introduced

in the Third Year and not at the beginning of the students' career. Certainly this is much wiser, because the students should be able to appreciate after 2½ years the nuances of classical refinement. I noticed that they had been invited to invent, if they could, a better order than any previously produced. Nobody did.

The domestic design department becomes more elaborate in the Third Year and admirable models of buildings are shown as well as perspectives; and I was glad to notice that the life class is well patronised and that modelling in clay or plasticine of ornament and buildings in mass is encouraged.

In the Fourth Year, naturally, larger buildings become the subject, and there is an exhibit of a "Hostel for Theological Students," none of which I liked. Several of them had a peculiarly penitential look, and one was mid-Victorian-Gothic in spirit. This is an instance I think, where even if inappropriateness cannot be claimed by the staff, the students could be told that it would be improbable that their designs would be accepted by a client simply because they did not look like what the client would expect.

The Fourth Year introduces many notes of reality which are admirable; for instance, the working drawings appear in the form of blue prints, and there are specifications appended to these. It was good to note, also, that large and monumental subjects are not the students' only concern and that small detail subjects, such as "A Casket," are made into quick exercises. One of these detail subjects was "The Entrance to a Naval Research Station." I thought none of them quite succeeded; they displayed too much imagination; one at least seemed to combine a monument at Père-la-Chaise, an Inca remain, and a bit of Broadcasting House.

The Fourth Year last subject is a moderately large town hall. I noticed testimonies of preliminary studies in this, and the designs were wise and wisely executed in the working drawings shown.

In the Fifth Year the large designs are based more and more on the realities of practice. Costs, the building Acts, lighting restrictions, fire regulations, and all the rest of it, are brought in to discourage the student. The curriculum here is based very much on the practical and utility side of design, and I thought the exhibits illustrating this were wholly admirable and much better than the one-day sketch designs shown, especially those for a church. In fact, church design seems to be a peculiarly unsympathetic subject, and as these edifices continue to be built, the matter might perhaps be taken a little more seriously.

Up to this point in the school the programmes are provided by the staff and the requirements are given, but at the end of the Fifth Year the Thesis Subject is different. Here the student chooses his own problem and invents his conditions. There are two really first-class exhibits in the room where these are shown: one is for "An International Library at Geneva" on the site which the League of Nations failed to acquire for their proposed headquarters, and the other is an imaginary "Drapery Store for Messrs. Marshall and Snelgrove" on their present site. The latter is illustrated by a large scale model, which I think is the best model of a building I have ever seen.

A. S. G. BUTLER [*F.*]

The Examinations

JULY 1933

The Final Examination

The Final Examination qualifying for candidature as Associate R.I.B.A. was held in London and Edinburgh from 5 to 13 July 1933.

Of the 173 candidates examined, 65 passed (18 in Part I only) and 108 were relegated.

The successful candidates are as follows:—

Abrams, Edward de la Tour.
Adams, John Stanley.
Baxter, Archibald James.
Beattie, William Henry.
Bedingfield, Eric Edward.
Bent, James Austen (*Part 1 only*).
Bentley, Stuart.
Boardman, Humphrey Colman.
Brewster, Herbert John (*Part 1 only*).
Church, Alfred George.
Coker, Walter Edward George.
Coleman, Frederick Randolph Doughty.
Cookson, Ronald Ewen.
Day, Eric Aubrey.
d'Avoine, Pierre Avicenna.
Dyer, Leonard Stacey (*Part 1 only*).
Fardell, Geoffrey Charles (*Part 1 only*).
Fermaud, Laurence Hayward Auguste (*Part 1 only*).
Fry, Albert Falconar (*Part 1 only*).
Gascoigne, Alice Rose.
Gedge, John.
Godsall, Harry Vernon.
Grigg, Leslie James (*Part 1 only*).
Grove, Edward Atkins.
Halahan, Richard Robert Crosby.
Hamnett, Victor.
Harley-Smith, Ronald (*Part 1 only*).
Harrison, John Edward Kenneth.
Hawkes, William Neville.
Herbert, Philip Burnell.
Hill, Frank Osborne Eversleigh.
Howard, Francis Aylmer (*Part 1 only*).
Ingham, Wilfred (*Part 1 only*).
Johnson, Frederick.
Kean, John Edward Robert Griffin.
Keeping, Cuthbert Montague George (*Part 1 only*).
Laing, James William.
Layfield, Arthur Charles.
Locke, Bertrand.
Marsh, John David Taylor.
Maskell, Sidney.
Middlemiss, Clyde Oliver.
Millard, Leonard William.
Minson, Stewart William.
Moore, John Robert.
Morreau, Cecil Joseph.
Mould, John Stuart.
Nicholson, William Leslie.
Potter, Robert James.
Prior, James Frederick (*Part 1 only*).
Reid, James Eugene.
Reyner, Frederick Barnard (*Part 1 only*).
Robson, William Calder (*Part 1 only*).
Runnicles, Cyril George (*Part 1 only*).
Scott, William John (*Part 1 only*).
Sharpe, Albert Lawrence.
Simmons, Charles Howard.
Snow, Harry Alexander.
Stubbs, George Hamilton Lewis (*Part 1 only*).
Timmons, William Hugh.
Townend, Cyril Marcell.
Wardley, Maurice Graham.
Wilkinson, Austin (*Part 1 only*).
Wright, Gerald Ryby Hall.
Wright, Harry Myles.

The Special Examination

The Special Examination qualifying for candidature as Associate R.I.B.A. was held in London from 5 to 11 July, and in Edinburgh from 5 to 13 July 1933.

Of the 18 candidates examined, 9 passed (one in Part I only and two in Part 2 only) and 9 were relegated.

The successful candidates are as follows:—

Borrett, Albert Reginald.
Chambers, Frank Pentland (*Part 2 only*).
Dilworth, Robert.
Dron, Robert (*Part 1 only*).
Gill, Alexander.
Goligher, Samuel George (*Part 2 only*).
Pearce, Lionel.
Pearce, Ralph Bertram.
Roberts, Brian Samuel.

The Examination in Professional Practice for Students of Schools of Architecture recognised for Exemption from the R.I.B.A. Final Examination

The Examination was held in London and Edinburgh on 11 and 13 July 1933. Of the 26 candidates examined, 20 passed and 6 were relegated.

The successful candidates are as follows:—

Baker, Harry George.
Ballinger, John Charles.
Brooks, Ruth Hillyard.
Bryce, Helen Mary.
Cadell, Gilbert Laurie.
Carrick, James Andrew.
Dickinson, Catherine.
Grice, Kenneth John.
Hickton, Edwin Harry.
Jackson, Pamela Dorothy.
Lind, Harry.
Livingstone, Duncan.
Mudd, Francis William.
Philip, Elizabeth Cecily Clare.
Redgrave, Claude Francis.
Robin, Alexander Arthur.
Rowledge, Donald Henry.
Thornton, Alexander William.
Wilmot, Enid Mary.
Young, Alan Rutherford.

Notices

THE *R.I.B.A. KALENDAR* 1933-34

The attention of members is drawn to the leaflet enclosed with the last issue of the JOURNAL. Changes of address, etc., for inclusion in the forthcoming issue of the *Kalendar*, must be notified to the Secretary R.I.B.A. before Saturday, 2 September 1933.

SCALE OF ARCHITECTS' CHARGES FOR LOCAL AUTHORITIES' AND PUBLIC UTILITY SOCIETIES' HOUSING WORK

The attention of members is drawn to the new Scale of Architects' Charges for Local Authorities' and Public Utility Societies' Housing Work, which was approved by the Council at their meeting on 17 July 1933 and which is enclosed with this number of the JOURNAL.

The 1925 Scale of Charges for Housing Work and the 1932 Scale of Fees for Private Enterprise and Municipal Housing Work have now been withdrawn from circulation in favour of the new scale enclosed and the Scale of Charges for Speculative Builders' Work which was issued to members with the JOURNAL on 8 July 1933.

Additional copies of the Scale of Charges for Local Authorities' and Public Utility Societies' Housing Work can be obtained on application to the Secretary R.I.B.A., price threepence each; no charge is made for extra copies of the Scale for Speculative Builders' Work.

THE USE OF THE TITLES "CHARTERED ARCHITECT" AND "REGISTERED ARCHITECT"

Now that the Registration Act is in force, the Council have been asked to give advice with regard to the best way to use the title "Registered Architect" by members of the R.I.B.A. who have been placed on the Register, and who already have the right to use the designation "Chartered Architect."

The Council recommend that members of the R.I.B.A. who have been registered should use the designation "Chartered and Registered Architect."

MEMBERSHIP OF THE R.I.B.A.

THE LICENTIATE CLASS

The revised Bye-laws of the Royal Institute of British Architects have received the approval of His Majesty's Privy Council, and applications may now be sent in for membership of the R.I.B.A. in the Licentiate Class. Full information and the necessary forms will be sent on application being made to the Secretary R.I.B.A., 9 Conduit Street, London, W.1.

LICENTIATES AND THE FELLOWSHIP

The attention of Licentiates is called to the provisions of Section IV, Clause 4 (*b*) and (*cii*), of the Supplemental Charter of 1925. Licentiates who are eligible and desirous of transferring to the Fellowship can obtain full particulars on application to the Secretary R.I.B.A., stating the clause under which they propose to apply for nomination.

OVERSEAS APPOINTMENTS

When members are contemplating applying for appointments overseas they are recommended to communicate with the Secretary R.I.B.A., who will supply them with any available information respecting conditions of employment, cost of living, climatic conditions, etc.

ASSOCIATES AND THE FELLOWSHIP

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the election to take place on 4 December 1933, they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 30 September.

Competitions

LLANDUDNO: PROPOSED BATHING POOL

Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

COMPETITION FOR PROPOSED INFANTS' SCHOOL, TUNNEL HILL ROAD, WORCESTER

Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

LIMITED COMPETITION FOR A NEW PUBLIC ELEMENTARY SCHOOL TO BE ERECTED AT HEN LANE, COVENTRY

Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

ARCHITECTURAL ASSOCIATION: COMPETITION FOR THE DESIGN OF SMALL VILLA PROPERTY

The Architectural Association, with the co-operation of Mr. J. W. Laing, has organised a competition for speculative house designs, open to all members of the A.A. and R.I.B.A.

The competition is for three types of houses and three premiums of £25 each are offered.

The jury of Assessors consists of the following :—

Mr. L. H. Bucknell [*F.*].
Mr. C. Lovett Gill [*F.*].
Mr. Arthur W. Kenyon [*F.*].
Mr. J. R. Leathart [*F.*].
Mr. T. Alwyn Lloyd [*F.*].
Mr. J. W. Laing.

Last day for receiving designs: 30 September 1933.

Members of the R.I.B.A. can obtain copies of the conditions from Mr. F. R. Yerbury, General Secretary, Architectural Association, 34-36, Bedford Square, W.C.1. Price 2s. 6d.

BELFAST: NEW SANATORIUM BUILDINGS

The Belfast Education Committee are proposing to hold a competition for new Sanatorium buildings at Whiteabbey and Graymount and Mr. R. S. Wilshere [*F.*] has been appointed to act as Assessor. Conditions are not yet available.

BEXHILL: PROPOSED ENTERTAINMENTS HALL

The Bexhill Corporation propose to hold a competition for a new Entertainments Hall, to be erected at a cost of £50,000. Mr. T. S. Tait [*F.*] has been nominated by the President of the R.I.B.A. to act as Assessor. Conditions are not yet available.

GIDEA PARK: FIVE TYPES OF HOUSES

The directors of Gidea Park Ltd. invite architects of British nationality to submit in competition, designs for five different types of houses, as follows:—

Class A:—£400 semi-detached (£800 pair).
Class B:—£500 semi-detached (£1,000 pair).
Class C:—£650 detached (with garage).
Class D:—£800 detached (with garage).
Class E:—£900 detached (with garage).
Assessors: Professor S. D. Adshead [*F.*].
Mr. A. E. Beresford [*F.*].
Alderman Ewart G. Culpin [*F.*].
Mr. E. Maxwell Fry [*A.*].
Mr. Howard Robertson [*F.*].
Mr. W. Harding Thompson [*F.*].

Premiums: £10 for the first five in each class and a further £20 to the author of the best design in each class.

Competitors may enter for all or any of the competitions.

Last day for receiving designs: 11 September 1933.

Last day for questions: 31 July 1933.

Conditions of the competitions may be obtained on application to the Surveyor, Gidea Park Ltd., The Estate Office, Hare Street, Gidea Park, Essex. Deposit, 5s.

HORNSEY: NEW TOWN HALL

The Hornsey Town Council invite architects of British nationality to submit in competition, designs for a new Town Hall.

Assessor: Mr. C. Cowles-Voysey [*F.*].
Premiums: £350, £250 and £150.
Last day for receiving designs: 23 September 1933.
Last day for questions: 30 May 1933.

SLOUGH: NEW COUNCIL OFFICES

The Slough Urban District Council have decided to hold an open competition in connection with the new Council Offices which are to be erected at Salt Hill. Premiums of £150, £100 and £50 will be offered and Professor H. S. Goodhart-Rendel [*F.*] has been appointed by the President of the R.I.B.A. to act as Assessor. Conditions have not yet been drawn up.

STOKE NEWINGTON: MUNICIPAL BUILDINGS

The Council of the Metropolitan Borough of Stoke Newington have authorised the holding of a competition for Municipal Offices and extensions to the Library and Electricity Offices. Conditions have not yet been drawn up.

SWINDON: PROPOSED TOWN HALL EXTENSION

The Town Council of Swindon propose to hold a competition for Extensions to the present Town Hall, and Professor A. B. Knapp-Fisher [*F.*] has been appointed by the President of the R.I.B.A. to act as Assessor. Conditions have not yet been drawn up.

Members' Column

NEW PRACTICE

Arthur John Penberthy, A.R.I.B.A., has commenced practice at Midland Bank Chambers, Queen Square, Wolverhampton, and will be pleased to receive trade catalogues.

PARTNERSHIP OR PRACTICE WANTED

Architect with extensive experience in industrial work would purchase a Partnership or ultimately the practice of an established business. Substantial sum available and moderate connection at present held. Must be Midland area. Communications to Box No. 1973, c/o Secretary R.I.B.A.

PARTNERSHIP REQUIRED

Assistant Government Architect recently retired, desires to enter into correspondence with an established firm, with a view to partnership. Twenty-one years' experience in all branches of the Profession. Specialized in Government Housing and Estates development. Capital available. Box 1833, c/o Secretary R.I.B.A.

Architect, qualified, recognized School, desires partnership in Country Practice; South Midlands preferred. Good experience in Competitions, Hospitals, domestic, and general office routine; also in own practice. Good knowledge of Cotswold and restoration work. Capital available. Box 3173, c/o Secretary R.I.B.A.

WANTED

A member of the late Society of Architects desires to have a copy of Architecture, the Journal of the Society, for 10 February 1910. If any member has a spare copy, will he be so kind as to communicate with Mr. C. McArthur Butler, 13, Taviton Street, London, W.C.1.

CHANGE OF ADDRESS

Mr. R. B. Selby [*A.*] has removed his offices to "Premier House," 48 Dover Street, Piccadilly, W.1.

A.B.S. INSURANCE DEPARTMENT HOUSE PURCHASE SCHEME.

(For property in Great Britain only.)

REVISED TERMS.

The A.B.S. Insurance Department is able, through the services of a leading Assurance Office, to assist an *Architect or his Client* in securing the capital for the purchase of a house on the following terms:—

Amount of Loan.

75 per cent.

of the value of the property as certified by the Surveyor employed by the Office.

Rate of Interest.

5 per cent. gross (which, at the present rate of income tax, represents 3¾ per cent. nett).

Legal Costs and Survey Fee,

also the amount of the first quarter's premium on the Endowment Assurance referred to below, are advanced in addition to the normal loan. If the loan is continued for more than fifteen years the *Survey and Legal Costs will be refunded* to the Borrower on repayment of the loan.

Repayment.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years or at the *earlier death* of the Borrower.

Special Concession to Architects.

In the case of houses in course of erection, it has been arranged that provided the Plan and Specification have been approved by the Surveyor acting for the Office, ONE-HALF of the amount of the loan agreed upon will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in to his satisfaction.

N.B.—Loans will not be undertaken under this scheme upon:

(*a*) Property the value of which is not sufficient to warrant a loan of at least £500 or of which the value exceeds £2,500 ;
(*b*) Property of the bungalow type ;
(*c*) Property not in the sole occupation of the Borrower.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary, A.B.S. Insurance Department, 9 Conduit Street, London, W.1. Telephone: Mayfair 0434.

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